Series 1957, No. 1 Issued February 1960

SOIL SURVEY

Newton County Mississippi

OUR SOIL ★ OUR STRENGTH

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

HOW TO USE THE SOIL SURVEY REPORT

THIS SURVEY of Newton County will serve several groups of readers. Among others, it will help farmers in planning the kind of management that will protect their soils and provide good yields; assist engineers in selecting sites for roads, buildings, ponds, and other structures; serve as a reference for students and teachers; and add to the soil scientist's fund of knowledge.

In making this survey, soil scientists walked over the fields and woodlands. They dug holes and examined surface soils and subsoils; measured slopes with a hand level; noticed differences in growth of crops, weeds, and brush; and, in fact, recorded all the things about the soils that they believed might affect their suitability for farming, engineering, and related uses.

The scientists plotted the boundaries of the soils on aerial photographs. Then, cartographers prepared from the photographs the detailed soil map in the back of this report. Fields, woods, roads, and many other landmarks can be seen on the map.

This soil survey is part of the technical assistance furnished by the Soil Conservation Service to the Newton County Soil Conservation District.

Locating the soils

Use the index to map sheets to locate areas on the large map. The index is a small map of the county on which numbered rectangles have been drawn to show where each sheet of the large map is located. When the correct sheet of the large map is located, it will be seen that boundaries of the soils are outlined in red, and that there is a symbol for each kind of soil. All areas marked with the same symbol are the same kind of soil, wherever they appear on the map. The symbol will be inside the area if there is enough room; otherwise it will be outside the area and a pointer will show where the symbol belongs. Section corners are shown on the map in black. They will aid in locating the soils.

Suppose, for example, an area located on the map has the symbol RaB2. The legend for the detailed map shows that this symbol identifies Ruston fine sandy loam, eroded very gently sloping phase. This soil and all others mapped in the county are described in the subsection, Soil Descriptions.

Finding information

Few readers will be interested in all of the soil report, for it has special sections for different groups, as well as sections that may be of value to all.

Farmers and those who work with farmers can learn about the soils in the section, Soils of Newton County, and then turn to the section, Use and Management of the Soils. In this way they first identify the soils on their farm and then learn how these soils can be managed and what yields can be expected. The soils are placed in capability units; that is, groups of soils that need similar management and respond in about the same way. For example, in the subsection, Soil Descriptions, Ruston fine sandy loam, eroded very gently sloping phase, is shown to be in capability unit 2 (IIe-1). The management suitable for this soil, therefore, will be stated under the heading, Capability unit 2 (IIe-1), in the section, Use and Management of the Soils.

Engineers will want to refer to the section, Engineering Properties of the Soils. A table in that section shows texture of soil layers, drainage, and other characteristics of the soils that affect engineering.

Soil scientists will find information about how the soils were formed and how they were classified in the section, Environment and Classification of the Soils.

Students, teachers, and other users will find information about soils and their management in various parts of the report, depending on their particular interest. Those not familiar with the county may want to refer to the section, Additional Facts About the County, where information on transportation, industries, population, and agricultural production are provided.

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Soil Survey Series 1957, No. 1 Issued February 1960

SOIL SURVEY OF NEWTON COUNTY, MISSISSIPPI

REPORT BY L. C. MURPHREE, SOIL CONSERVATION SERVICE

SOILS SURVEYED BY L. C. MURPHREE, IN CHARGE, AND C. H. FREEMAN, H. L. NEAL, AND W. W. NYE, SOIL CONSERVATION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE, AND L. C. STANDIFER, MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

CORRELATION BY I. L. MARTIN, SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE IN COOPERATION WITH THE MISSISSIPPI AGRICULTURAL EXPERIMENT STATION

NEWTON COUNTY is in the east-central part of Mississippi. Decatur, the county seat, is 25 miles west of Meridian and 105 miles east of Vicksburg (fig. 1). The land area of the county is 371,200 acres, or 580 square miles.

Soils of Newton County

Shown on the large soil map at the back of this report are the different kinds of soils, or mapping units, in the county. To understand these soils, it will be necessary to learn some of the terms used in describing them. The first part of this section, therefore, provides some definitions commonly used and explains some of the methods scientists use in making a survey. Following these definitions there is a description of the general soil patterns, or soil associations, in the county. These patterns are useful in understanding soils because they give a broad idea of the soils and do not require that so many details be remembered. Finally, each soil series (groups of soils basically alike) and each mapping unit, or single soil, is described.

How Soils Are Mapped

The scientist who makes a soil survey examines the soils in the field, classifies them in accordance with the facts that he observes, and draws their boundaries on an aerial photograph or other map. In his report he describes the soils he has mapped; groups them for the convenience of farmers, engineers, soil scientists, and other users; and points out some of the strong points and shortcomings of the soils when they are used for various purposes.

In the following, some of the methods and terms commonly used by the soil scientist are explained. The reader will want to refer to the glossary at the back of the report for definitions of many terms used in this report.

FIELD STUDY.—The soil scientist bores or digs many holes to see what the soils are like. The holes are not spaced in a regular pattern; they are located according to the lay of the land. Normally, the borings are not more than a quarter of a mile apart, but in some areas they are much closer. In most soils each boring, or hole, reveals several distinct layers, called horizons, which collectively are known as the soil profile. Each layer is studied to see how it differs from others in the profile and to learn things about the soil that influence its ability to grow plants.

Color is normally related to the amount of organic matter. The darker the surface soil, as a rule, the more organic matter it contains. Streaks and spots of gray, yellow, and brown especially in the lower layers, generally indicate poor drainage and poor aeration. Colors are given in descriptive terms, such as "dark grayish brown." Following the word description is a Munsell color notation, for example, 10YR 4/2, which corresponds to the term "dark grayish brown." Munsell notations are a means of recording color more accurately than possibly can be done in words. Such notations are useful to those who must make fine comparisons among soils; they can be ignored by most readers.

Texture, or the content of sand, silt, and clay, is determined by the way the soil feels when rubbed between the fingers; it is later checked by laboratory analysis. Texture determines how well a soil retains moisture, plant nutrients, and fertilizer, and whether it is easy or difficult to cultivate.

Structure, which is the way the individual soil particles are arranged in larger grains, and the amount of pore space between grains, gives clues to the ease or difficulty with which the soil is penetrated by plants and by moisture.

Consistence, or the tendency of the soil to crumble or to stick together, indicates whether it is easy or difficult to keep the soil open and porous under cultivation.

Reaction, expressed in pH values, indicates the relative acidity or alkalinity of the soil, as measured by chemical tests. The acidity of a soil affects its response to fertilization and its suitability for various kinds of crops.

Other characteristics observed in the course of field study and considered in classifying the soils include the following: The depth of the soil over impermeable layers; the steepness and pattern of slopes and the degree of erosion; the runoff of surface water, movement of water through the soil, and occurrence of a water table in the soil; and the nature of the underlying material from which the soil has developed.

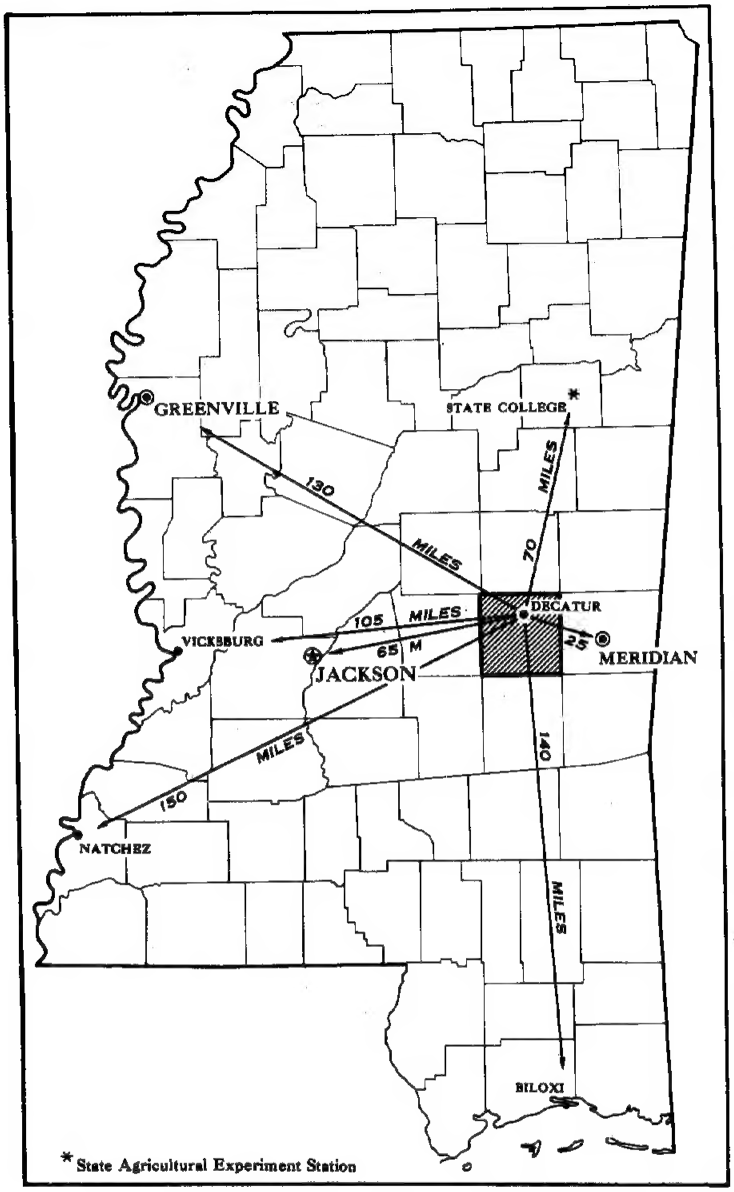

Figure 1.—Location of Newton County in Mississippi.

CLASSIFICATION.—On the basis of the characteristics observed by the field survey team or determined by laboratory tests, soils are classified in phases, types, and series. The soil type is the basic unit of classification. A soil type may consist of several phases. Soil types that resemble each other in most of their characteristics are grouped into soil series.

Soil type.—Soils similar in kind, thickness, and arrangement of soil layers, and having essentially the same texture in the surface layer, are classified as one soil type.

Soil phase.—Because of differences other than kind, thickness, and arrangement of layers, some soil types are divided into two or more phases. Differences in slope, degree of erosion, depth of the soil over the substratum, and type of drainage (natural or artificial) are examples of characteristics that suggest dividing a soil type into phases.

The soil phase (or the soil type if it has not been divided into phases) is the mapping unit, or soil, shown on the detailed soil map. It is the unit that has the narrowest range of characteristics. Use and management, therefore, can be specified in more detail for the mapping unit than for broader classifications.

Soil series.—Two or more soil types that have similar profiles are normally designated as a soil series. In a given area, however, a soil series may be represented by only one soil type or soil phase. A soil series is named for a place near which it was first found. Thus, Tilden is the name of a soil series consisting of moderately well drained, friable, strongly acid, brown or grayish-brown soils, moderately deep to a pan, that were first recognized in Prentiss County, Miss., and named for Tilden, a small settlement in that county.

Soil complex.—Where very small areas of two or more kinds of soil are so intricately mixed that separate mapping is impractical, the soils are mapped together and called a soil complex. Thus, the Lauderdale-Boswell complex mapped in Newton County consists of Boswell and Lauderdale soils.

Undifferentiated soil group.—In some areas two or more recognized soils occur together in an irregular pattern and are so much alike in practical use that separation is not justified; they are, therefore, mapped as an undifferentiated group. Shubuta and Cuthbert soils are mapped as such a group in Newton County.

Soil Associations

A soil association is a pattern of soils that is large enough to be shown on a small-scale map. It may contain only a few soils or many. The soils it contains may be much alike or widely different.

A soil association is named for the principal soils in the pattern. Normally, these principal soils are in the association wherever it occurs, but the minor soils may or may not be present.

The seven soil associations in Newton County are shown in figure 2. A map of this kind is not suitable for study of single farms or small areas. It can be used alone in planning agriculture, forestry, or water conservation for communities in Newton County, or it can be used with other soil association maps for planning in areas larger than a county.

1. PRENTISS-TILDEN-MANTACHIE-BIBB-IUKA

Mostly moderately well drained soils on stream terraces; moderately well drained to poorly drained soils on flood plains

This soil association occupies four widely distributed areas and covers about 15 percent of the county. Broad stream terraces and stream bottoms characterize the landscapes.

The Prentiss and Tilden soils occupy most of the land on the stream terraces, and the Mantachie, Bibb, and Iuka soils are dominant on the stream bottoms. Minor areas of Myatt and Stough soils are on the stream terraces, and small areas of Chastain soils are on the bottom lands with the Bibb soils.

The surface soils in this association are dominantly grayish-brown to gray very fine sandy loams. The subsoils, however, differ more widely. The Prentiss and

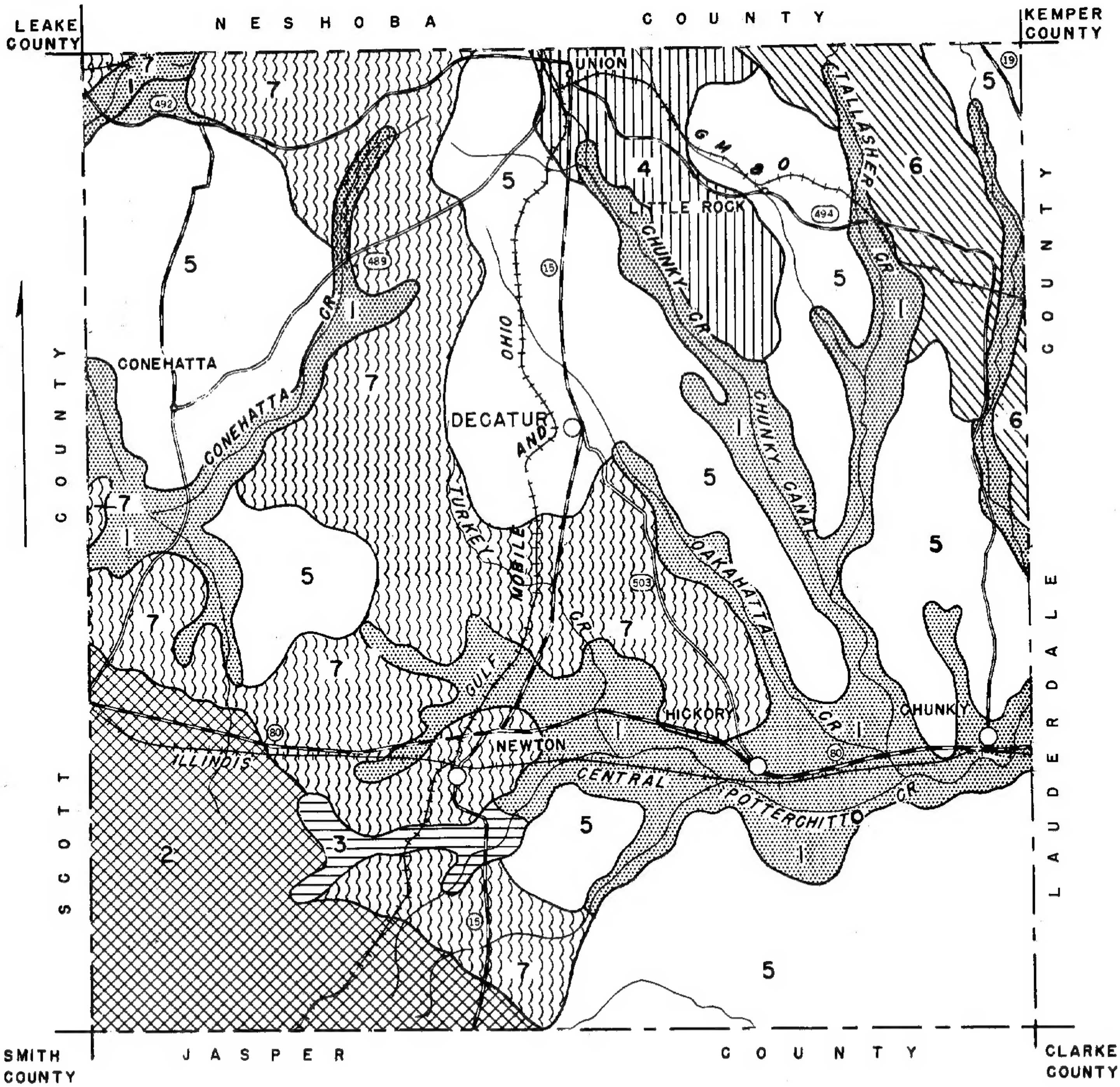

Figure 2.—**Soil associations of Newton County, Mississippi:**

1. **Prentiss-Tilden-Mantachie-Bibb-Iuka: Mostly moderately well drained soils on stream terraces; moderately well drained to poorly drained soils on flood plains.**
2. **Eutaw-Vaiden-Mayhew-Sawyer: Mostly somewhat poorly drained and poorly drained soils on nearly level ridgetops and side slopes.**
3. **Houlka-Catalpa-Una: Mostly well drained and somewhat poorly drained soils on flood plains.**
4. **Nacogdoches-Ruston: Well-drained soils on upland ridgetops and steep side slopes.**
5. **Ruston-Shubuta: Mostly well drained and moderately well drained soils on upland ridgetops and steep slopes.**
6. **Lauderdale-Boswell: Mostly moderately well drained and excessively drained soils on narrow ridgetops and steep slopes.**
7. **Ora-Dulac-Savannah-Franklinton-Shubuta: Mostly moderately well drained soils on broad upland ridgetops and steep side slopes.**

Tilden soils have yellowish-red to brownish-yellow sandy clay loam subsoils that overlie a fragipan at depths of about 24 to 29 inches. The Myatt and Stough soils also have a fragipan. The Bibb, Mantachie, and Chastain soils have a light-gray to gray subsurface layer, but the corresponding layer in the Iuka soils is yellowish brown to light gray.

Most of the acreage on the terraces has been cleared, but only small areas have been cleared on the bottoms. The Tilden and Prentiss soils are used for row crops and pasture; the Mantachie and Iuka for corn and some cotton or hay; and the Bibb, where cleared, for pasture.

2. EUTAW-VAIDEN-MAYHEW-SAWYER

Mostly somewhat poorly drained and poorly drained soils on nearly level ridgetops and side slopes

This association occupies one area that accounts for about 10 percent of the total acreage in the county. The characteristic landscape consists of long, broad, level to gently undulating ridgetops, side slopes, and narrow strips of local alluvium in the draws.

The Vaiden, Sawyer, and Mayhew soils are on the ridgetops, and the Vaiden and Sawyer are on the side slopes. The poorly drained Una and somewhat poorly drained Houlka soils, which occupy less than 5 percent of the association, are in the narrow draws. Much of the association is known as hogwallow prairie because of the small ridges and depressions formed by the Eutaw-Vaiden soils.

The surface layers of the soils in this association are dominantly grayish-brown to gray fine sandy loams and clays. The subsoils range from brownish-yellow sandy clay in the Sawyer to a mottled gray clay in the Eutaw.

Much of this association was cropped at one time, but now it is in pine trees and grass. The slow internal drainage, heavy texture, and poor surface drainage of these soils make growing of row crops difficult. With proper fertilizing and seeding, however, they produce good pasture and hay.

3. HOULKA-CATALPA-UNA

Mostly well drained and somewhat poorly drained soils on flood plains

This association occurs in fairly narrow, small stream bottoms and covers less than 1 percent of the county. The surface soils are dark grayish-brown to gray clays. The subsoils range from grayish-brown clay in the Catalpa to mottled gray clay in the Una soils.

Areas of this association frequently are a minor part of livestock farms that are dominantly on the Eutaw-Vaiden-Mayhew-Sawyer association. Much of the association has been cleared, but little is used for row crops because of the hazard of overflows. Most of the association is pastured.

4. NACOGDOCHES-RUSTON

Well-drained soils on upland ridgetops and steep side slopes

This association is confined to an area southeast of Union and covers about 2 percent of the county. The association is characterized by long, fairly narrow, gently undulating ridgetops; steep side slopes; and narrow strips of local alluvium in the draws.

The gently sloping to moderately steep, well-drained Nacogdoches and Ruston soils are on the ridgetops and side slopes. The poorly drained Bibb soils and somewhat poorly drained Mantachie soils, in the narrow draws, together occupy about 5 percent of the association.

The surface soils of this association are dominantly grayish-brown to brown fine sandy loams and loams. A sizable acreage has been eroded and, therefore, has a surface layer of clay loam. The subsoils range from yellowish-red sandy clay loam in the Ruston to red clay in the Nacogdoches soils.

The more gentle slopes are well suited to row crops and pasture. The steeper slopes are better for pasture and pine trees. All except the very gently sloping areas are highly susceptible to erosion. Grass grows well on the steeper slopes and can be used as a permanent cover that will control erosion.

Farms on this association range from small to medium in size. The smaller farms normally are on the steeper areas, and they produce mainly for use of farm families. Nevertheless, most of the farms in this association are of the general type.

5. RUSTON-SHUBUTA

Mostly well drained and moderately well drained soils on upland ridgetops and steep slopes

The eight widely distributed areas of this association cover about 40 percent of the county. Long, fairly narrow, gently undulating ridgetops; steep side slopes; and narrow strips of local alluvium are characteristic of the landscape.

The Ruston and Shubuta soils are dominant on the ridgetops and side slopes, though the association includes small areas of Boswell soils on uplands near Conehatta. The poorly drained Bibb and Johnston soils and somewhat poorly drained Mantachie soils, in the narrow draws, occupy about 5 percent of the association.

The Ruston and Shubuta surface soils are dominantly grayish-brown to pale-brown fine sandy loams. Sizable areas, however, have been eroded to the extent that the surface layer is a clay loam. The subsoils range from dark-brown sandy clay in the Shubuta to a yellowish-red sandy clay loam in the Ruston. Where the two series are on the same slope, the Shubuta soils are normally at the base of the slope. The Boswell soils have strong-brown surface soils and red clay subsoils.

The smoother ridgetops in this association are cultivated. Most of the once-cropped steeper slopes and the adjacent narrow draws are now in pine forest or unimproved pasture. Some of the steepest slopes still support the original vegetation.

Many of the farms in this association are small and have low income. A few of the larger general farms grow chiefly cotton, corn, and hay. The soils of this association respond well to high fertilization, liming, addition of organic matter, and similar practices of good management. Erosion is a hazard where the soils are left bare.

6. LAUDERDALE-BOSWELL

Mostly moderately well drained and excessively drained soils on narrow ridgetops and steep slopes

The two areas of this association together occupy about 2 percent of the county. The landscape is one of long, narrow, gently undulating ridgetops; steep side slopes; and narrow strips of local alluvium in the draws.

The Lauderdale and Boswell soils are on the ridgetops and side slopes. The poorly drained Bibb and Johnston soils and the somewhat poorly drained Mantachie soils,

in the narrow draws, occupy less than 1 percent of the association.

The Lauderdale and Boswell surface soils are grayish-brown to strong-brown fine sandy loams and stony fine sandy loams. A small acreage, particularly on the Boswell soils, has eroded to the extent that the surface layer is a clay loam. The subsoils range from reddish clay in the Boswell soils to gray, partially weathered sandstone in the Lauderdale soils.

This association produces good pine timber, and much of it has been cut over several times. The timber is harvested mainly for pulpwood. Most of the farmers on this association produce mainly for use on the farm and have outside work. Only a small acreage is cropped, and that is mainly on the Boswell soils.

7. ORA-DULAC-SAVANNAH-FRANKLINTON-SHUBUTA

Mostly moderately well drained soils on broad upland ridgetops and steep side slopes

The four areas of this association are widely distributed in the western half of the county and occupy about 30 percent of its total acreage. The landscape is made up of long, broad, gently undulating ridgetops; fairly steep side slopes; and narrow strips of local alluvium in draws.

The Ora-Dulac and the Savannah-Franklinton soils are on the ridgetops, and the Shubuta soils are on the side slopes. Less than 10 percent of the association consists of poorly drained Bibb and somewhat poorly drained Mantachie soils, which are in the narrow draws.

Not considering the minor soils in the draws, the surface soils in this association are dominantly grayish-brown to gray silt loam or fine sandy loam. A sizable acreage, however, has eroded to the extent that the surface layer is a clay loam. The subsoils are dark-brown sandy clay in the Shubuta, yellowish-brown silty clay loam in the Franklinton, and sandy clay loam in the Savannah soils. The Shubuta soils, on the steeper slopes, do not have the fragipan that exists in the Ora, Dulac, Savannah, and Franklinton soils.

This association is well suited to most crops commonly grown in the county, but erosion is a hazard on the steeper slopes. Grass grows well on these slopes and provides a cover that will control erosion.

Soil Descriptions

This subsection describes the soil series (groups of similar soils) and mapping units (single soils) in Newton County. There are 32 series in the county (table 1), most of which contain more than one mapping unit. These soil series are arranged in alphabetic order. Each series is described, and then the mapping units in that series. The mapping units in a soil series that have the same texture in the surface layer are described together. For example, all the mapping units in the Boswell series that have a fine sandy loam surface layer are described first, and then all that have a sandy clay loam surface layer.

Ordinarily, in each series, only one mapping unit is described in detail for each kind of surface layer. For example, the first mapping unit in the Boswell series that has a fine sandy loam surface layer is described in detail. The other Boswell mapping units having this kind of surface layer are described briefly, because it is to be assumed that all Boswell soils with the same texture in the surface layer have about the same kinds of layers in the rest of their profile.

The description of each mapping unit points out slope, erosion, and similar properties that distinguish it from other soils in the series that have the same kind of surface layer. Frequently the characteristics emphasized for a mapping unit are those that directly affect its management. For example, there are five soils in the Boswell series that have a fine sandy loam surface layer and are similar in profile, but these soils differ in slope, a characteristic that affects their management.

Following the name of each mapping unit there is a letter symbol in parentheses, for example, (Ba). This symbol identifies the soil on the map. At the end of each description there is a cross reference to the capability unit in which the soil has been placed. Management for each capability unit is suggested in the section, Use and Management of the Soils. The location and distribution of the soils are shown on the detailed map at the back of this report. Their approximate acreage and proportionate extent are given in table 2.

Some of the terms used in describing the soil series and mapping units have been explained in the preceding subsection; others will be found in the glossary. The descriptions of the soil profiles, which are in smaller type than the rest of the text, contain most of the terms that may not be familiar or that have special meanings in soil science.

The layers, or horizons, in the soil profile are marked by depths—"0 to 10 inches," "10 to 20 inches," and so on. These are average depths. But it is also important to know how much each layer varies from the average depth; therefore, the range in depth, for example, "10 to 15 inches thick," is given for most of the layers.

In most of the layers, following a color name, there is a Munsell notation, as (10YR 7/1). This notation is for the use of soil scientists and others who need to define color more precisely than is possible by using words. Most readers can ignore these notations. Unless it is otherwise stated, the color given for a soil is its color when moist.

Bibb series

These soils are on flood plains. They consist of poorly drained, strongly acid, light-gray to dark-gray silt loam or sandy loam underlain by a grayish sandy clay loam. They were derived from materials that washed from Savannah, Ora, Shubuta, and associated soils. The Bibb soils are associated with the Ochlockonee, Iuka, and Mantachie soils but are more poorly drained.

Cultivation is hazardous because flooding occurs frequently. The fertility level is low.

Bibb soils (Ba).—The Bibb soils are mapped together as an undifferentiated unit. Here is a profile description of Bibb fine sandy loam taken in a wooded area near Oakahatta Canal, one-half mile southeast of Decatur, Miss.

0 to 10 inches, light-gray (10YR 7/1) friable fine sandy loam; weak fine granular structure; strongly acid; 6 to 10 inches thick; abrupt to clear boundary.

10 to 20 inches, light-gray (10YR 7/1) fine sandy clay loam with distinct mottles of various shades of brown and yellow; friable; strongly acid; 10 to 15 inches thick; clear irregular boundary.

20 to 30 inches, gray (10YR 5/1) sandy clay loam with many, distinct, yellow, brown, and red mottles; firm; strongly acid; 2 feet or more thick.

TABLE 1.—*Important characteristics of the soil series*

Soil series	Parent material	Description	Drainage class	Slope range	Profile development
				Percent	
Bibb	Sandy alluvium of the Coastal Plain.	Light-gray to dark-gray silt loam and sandy loam over gray sandy clay loam.	Poorly drained	0–2	None.
Binnsville	Predominantly soft calcareous formations.	Very dark gray clay, 8 to 20 inches deep, over calcareous marl.	Poorly drained	2–8	Weak.
Boswell	Sands and clays over clayey alluvium of the Coastal Plain.	Brownish-gray to strong-brown fine sandy loam, about 6 inches deep, over red clay which grades to mottled clay at a depth of 20 inches.	Moderately well drained.	2–30	Medium.
Cahaba	Old sandy aluvium of the Coastal Plain.	Light yellowish-brown very fine sandy loam over yellowish-red sandy clay loam; faint mottles at depths of 38 to 40 inches.	Well drained	0–8	Weak.
Catalpa	Alkaline clay alluvium	Very dark grayish-brown to grayish-brown clay, 20 to 30 inches deep, over mottled clay.	Moderately well drained.	0–2	None.
Chastain	Sandy alluvium of the Coastal Plain.	Dark grayish-brown to gray sandy loam to silt loam, about 16 inches deep, over mottled clay.	Poorly drained	0–2	None.
Cuthbert	Clay and sandy clay loam formations of the Coastal Plain.	Grayish-brown fine sandy loam to clay loam, about 8 to 14 inches deep, over yellowish-red clay.	Moderately well drained to well drained.	17–35	Weak.
Dulac	Shallow loess over sandy clay loam of the Coastal Plain.	Grayish-brown to brown silt loam over yellowish-red silty clay loam; fragipan at a depth of 23 inches, and sandy clay loam at 62 inches.	Moderately well drained to well drained.	0–12	Strong.
Eustis	Sand and loamy sand of the Coastal Plain.	Dark grayish-brown to dark-brown loamy sand that grades to reddish-yellow loamy sand at a depth of 38 inches.	Somewhat excessively drained.	2–17	Weak.
Eutaw	Clay of the Coastal Plain over calcareous formations.	Dark-gray to gray clay, about 8 inches deep, over mottled gray clay, which grades to calcareous material at a depth of about 44 inches.	Poorly drained to somewhat poorly drained.	0–5	Medium.
Franklinton	Shallow loess over sandy clay of the Coastal Plain.	Grayish-brown silt loam over yellowish-brown silty clay loam; fragipan at a depth of 19 inches, which grades to fine sandy clay at about 55 inches.	Somewhat poorly drained to moderately well drained.	0–8	Strong.
Houlka	Clay and sandy clay alluvium of the Coastal Plain.	Very dark gray to gray clay, about 24 inches deep, over mottled clay.	Somewhat poorly drained.	0–2	None.
Independence	Sand and loamy sand of the Coastal Plain.	Dark-brown loamy fine sand, 36 to 40 inches deep, over very pale brown fine sand.	Somewhat excessively drained.	0–5	Weak.
Iuka	Sandy alluvium of the Coastal Plain.	Grayish-brown very fine and fine sandy loam, about 10 inches deep, over yellowish-brown fine sandy loam.	Moderately well drained.	0–2	None.
Johnston	Sandy alluvium of the Coastal Plain.	Dark-gray to black loam, 20 to 25 inches deep, over gray sandy clay.	Poorly drained	0–2	None.
Lauderdale	Predominantly sand formation over the Tallahatta (Buhrstone) formation.	Dark-gray stony fine sandy loam over sandy clay that contains partially weathered sandstone fragments.	Well drained to excessively drained.	5–35	Weak.
Mantachie	Sandy alluvium of the Coastal Plain.	Yellowish-brown to gray fine sandy loam over light-gray fine sandy loam.	Somewhat poorly drained.	0–2	None.
Mayhew	Thick beds of micaceous sandy clay.	Dark grayish-brown sandy clay loam over mottled sandy clay.	Poorly drained	0–5	Medium.
Myatt	Old sandy alluvium of the Coastal Plain.	Gray very fine sandy loam, 16 inches deep, over gray sandy clay; profile mottled to the surface.	Poorly drained	0–2	Weak.

TABLE 1.—*Important characteristics of the soil series*—Continued

Soil series	Parent material	Description	Drainage class	Slope range	Profile development
				Percent	
Nacogdoches	Sandy clay and clay over volcanic tuff or greensand of the Coastal Plain.	Yellowish-red loam to sandy clay loam, 4 to 6 inches deep, over dark-red clay; faint mottles at depths of about 24 to 30 inches.	Well drained	2–30	Medium.
Ochlockonee	Sandy alluvium of the Coastal Plain.	Grayish-brown fine sandy loam that grades to brown fine sandy loam at a depth of about 10 inches; yellowish-brown fine sandy clay loam at a depth of about 36 inches.	Well drained	0–2	None.
Ora	Unconsolidated beds of acid sand, sandy loam, and sandy clay of the Coastal Plain.	Grayish-brown very fine sandy loam, 10 to 12 inches deep, over yellowish-red sandy clay loam, which grades to a fine sandy, loamy pan at depths of 22 to 24 inches.	Moderately well drained to well drained.	0–12	Medium.
Prentiss	Old sandy alluvium of the Coastal Plain.	Light-brownish gray very fine sandy loam over yellow to brownish-yellow fine sandy clay loam; mottles at a depth of about 30 inches.	Moderately well drained.	0–12	Weak.
Ruston	Acid sandy clay loam formation of the Coastal Plain.	Grayish-brown to pale-brown fine sandy loam over yellowish-red sandy clay loam, which at depths of about 30 to 36 inches grades to fine sandy loam.	Well drained	2–30	Medium.
Savannah	Unconsolidated beds of acid sand, sandy loam, and sandy clay of the Coastal Plain.	Light brownish-gray fine sandy loam over yellowish-brown sandy clay loam; fragipan at a depth of 24 inches.	Somewhat poorly drained to moderately well drained.	0–8	Medium.
Sawyer	Sandy clay loam and clay of the Coastal Plain.	Dark-gray fine sandy loam, 8 to 10 inches deep, over brownish-yellow sandy clay, which grades to mottled sandy clay loam at a depth of 26 inches.	Somewhat poorly drained.	0–12	Medium.
Shubuta	Sandy clay and clay of the Coastal Plain.	Pale-brown fine sandy loam over dark-brown sandy clay that grades to mottled, red fine sandy clay loam at a depth of about 28 inches.	Moderately well drained.	2–30	Medium.
Stough	Old sandy alluvium of the Coastal Plain.	Dark-gray very fine sandy loam, about 11 inches deep, over mottled, very pale brown sandy clay loam; fragipan at a depth of about 23 inches.	Somewhat poorly drained.	0–5	Weak.
Sumter	Predominantly Selma Chalk	Light olive-brown clay, 11 to 20 inches deep, over calcareous chalk.	Somewhat poorly drained.	2–17	Weak.
Tilden	Old sandy alluvium of the Coastal Plain.	Grayish-brown very fine sandy loam, 10 to 20 inches deep, over yellowish-red sandy clay loam; mottled fragipan at depth of about 24 inches.	Moderately well drained.	0–12	Weak.
Una	Clayey alluvium of the Coastal Plain.	Dark-gray to light brownish-gray clay over a light-gray clay, which is underlain by beds of sand and clay of various colors.	Poorly drained	0–2	None.
Vaiden	Clay of the Coastal Plain over calcareous formations (marl).	Gray clay surface soil, 6 inches deep, over brownish-yellow clay that grades to calcareous clay material at a depth of about 48 inches.	Somewhat poorly to poorly drained.	0–12	Medium.

TABLE 2.—*Approximate acreage and proportionate extent of the soils*

[Acreages are based on 10-percent random samples]

Soil	Acres	Percent
Bibb soils	13,621	3.7
Binnsville clay:		
Eroded very gently sloping marly phase	1,166	.3
Severely eroded gently sloping marly phase	1,896	.5
Boswell fine sandy loam:		
Eroded very gently sloping phase	1,426	.4
Eroded gently sloping phase	1,606	.4
Eroded sloping phase	2,902	.8
Eroded strongly sloping phase	1,648	.4
Moderately steep phase	1,184	.3
Boswell sandy clay loam:		
Severely eroded gently sloping phase	1,464	.4
Severely eroded sloping phase	1,455	.4
Cahaba very fine sandy loam:		
Eroded very gently sloping phase	350	.1
Level phase	184	[1]
Eroded gently sloping phase	116	[1]
Catalpa clay, local alluvium phase	2,292	.6
Chastain soils	2,196	.6
Eustis loamy sand:		
Gently sloping dark surface phase	1,677	.5
Strongly sloping dark surface phase	1,170	.3
Eutaw-Vaiden clays:		
Level phases	3,674	1.0
Very gently sloping phases	4,657	1.3
Houlka clay	4,943	1.3
Independence loamy fine sand	707	.2
Iuka fine sandy loam	6,886	1.9
Iuka very fine sandy loam, local alluvium phase	880	.2
Johnston loam	1,896	.5
Lauderdale stony fine sandy loam:		
Eroded gently sloping phase	1,241	.3
Sloping to moderately steep phases	1,391	.4
Lauderdale-Boswell complex:		
Eroded gently sloping phases	1,142	.3
Eroded sloping phases	1,571	.4
Strongly sloping and moderately steep phases	2,834	.8
Mantachie soils	40,288	11.0
Mantachie very fine sandy loam, local alluvium phase	22,246	6.0
Mayhew fine sandy clay loam:		
Nearly level phase	1,103	.3
Very gently sloping phase	2,508	.7
Myatt very fine sandy loam	1,025	.3
Nacogdoches loam:		
Eroded very gently sloping phase	1,112	.3
Eroded gently sloping phase	1,421	.4
Eroded sloping phase	1,441	.4
Strongly sloping phase	2,815	.8
Eroded strongly sloping phase	695	.2
Eroded moderately steep phase	889	.2
Nacogdoches sandy clay loam:		
Severely eroded very gently sloping phase	223	.1
Severely eroded gently sloping phase	2,457	.7
Severely eroded sloping phase	2,322	.6
Severely eroded strongly sloping phase	531	.1
Ochlockonee fine sandy loam, local alluvium phase	232	.1
Ora and Dulac soils:		
Eroded very gently sloping phases	6,171	1.7
Very gently sloping phases	645	.2
Gently sloping phases	938	.3
Eroded gently sloping phases	9,827	2.6
Severely eroded gently sloping phases	7,786	2.1
Ora fine sandy loam, eroded sloping phase	2,090	.6
Prentiss very fine sandy loam:		
Very gently sloping phase	5,029	1.4
Level phase	580	.2
Eroded very gently sloping phase	6,642	1.8
Eroded gently sloping phase	1,635	.4
Eroded sloping phase	19	[1]
Ruston fine sandy loam:		
Eroded very gently sloping phase	2,418	.7
Very gently sloping phase	87	[1]
Severely eroded very gently sloping phase	597	.2
Gently sloping phase	1,209	.3
Eroded gently sloping phase	9,933	2.7
Severely eroded gently sloping phase	4,962	1.3
Sloping phase	4,005	1.1
Eroded sloping phase	10,610	2.9
Severely eroded sloping phase	8,773	2.4
Strongly sloping phase	10,397	2.8
Eroded strongly sloping phase	13,106	3.5
Severely eroded strongly sloping phase	6,084	1.6
Moderately steep phase	7,099	1.9
Eroded moderately steep phase	1,489	.4
Severely eroded moderately steep phase	522	.1
Savannah and Franklinton soils:		
Eroded very gently sloping phases	2,302	.6
Very gently sloping phases	693	.2
Gently sloping phases	39	[1]
Eroded gently sloping phases	793	.2
Sawyer fine sandy loam:		
Very gently sloping phase	562	.2
Eroded very gently sloping phase	2,040	.5
Level phase	1,084	.3
Eroded gently sloping phase	3,023	.8
Eroded sloping phase	1,974	.5
Shubuta fine sandy loam:		
Eroded very gently sloping phase	2,351	.6
Very gently sloping phase	500	.1
Gently sloping phase	725	.2
Eroded gently sloping phase	7,877	2.1
Sloping phase	3,406	.9
Eroded sloping phase	12,906	3.5
Strongly sloping phase	4,014	1.1
Eroded strongly sloping phase	7,892	2.1
Shubuta clay loam:		
Severely eroded very gently sloping phase	174	[1]
Severely eroded gently sloping phase	7,599	2.0
Severely eroded sloping phase	14,687	4.0
Severely eroded strongly sloping phase	1,925	.5
Shubuta and Cuthbert soils, moderately steep phases	638	.2
Stough very fine sandy loam:		
Level phase	4,923	1.3
Very gently sloping phase	1,209	.3
Sumter clay, eroded gently sloping phase	981	.3
Tilden very fine sandy loam:		
Eroded very gently sloping phase	1,257	.3
Very gently sloping phase	145	[1]
Level phase	261	.1
Gently sloping phase	500	.1
Eroded gently sloping phase	796	.2
Eroded sloping phase	77	[1]
Una clay, local alluvium phase	760	.2
Vaiden-Eutaw clays:		
Very gently sloping phases	4,248	1.1
Eroded gently sloping phases	4,677	1.3
Eroded sloping phases	2,026	.5
Total	371,200	100.0

[1] Less than 0.1 percent.

The texture varies from silt loam to sandy loam, commonly within the same area. It is impossible to separate textures accurately because the soils are so intermingled. Subsoils range from loam to clay. These soils are wet, subject to overflow, poorly drained, and gray at or near the surface. Infiltration is fairly slow, permeability of the subsoil is moderately slow, and the available moisture capacity is limited. These soils are strongly acid and low in organic matter and natural fertility. Their productivity is low.

Practically all of the acreage is used to grow trees or grass. Good pasture can be grown if the soils are properly fertilized, limed, and seeded. If these soils are used for pasture, they need a complete drainage system, including secondary ditches and W-ditches that will remove excess surface water. Capability unit 31 (IVs–1).

Binnsville series

The Binnsville soils are poorly drained, very gently sloping to gently sloping, and alkaline throughout. They have developed from calcareous chalk and shelly marl. They have a very dark-gray clay surface soil and a dark-gray clay subsoil underlain at 8 to 20 inches by pale-brown marl. The native vegetation is prairie grasses, hardwoods, and a few pines.

The Binnsville soils occur in small patches. They are associated with the Sumter soils within large areas of the acid Vaiden and Eutaw soils. They differ from the Sumter in having a dark surface soil and in being shallow to marl. The Binnsville soils are not suitable for cultivation.

Binnsville clay, eroded very gently sloping marly phase (BbB2).—The following describes a profile of this soil.

A_{p1} 0 to 4 inches, very dark gray (10YR 3/1) clay; moderate medium subangular blocky structure; firm; alkaline; 4 to 6 inches thick; gradual wavy boundary.

A_{p2} 4 to 8 inches, dark-gray (10YR 4/1) clay with many, fine, distinct, light yellowish-brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable; alkaline; 6 to 8 inches thick; gradual wavy boundary.

C 8 to 60 inches, very pale brown (10YR 8/3) calcareous marl.

The thickness of the solum (depth to C horizon) ranges from 15 to 20 inches. The surface layer (the A horizon) varies from one location to another. Included with this soil are small areas of Sumter and, in some places, of the acid Vaiden soils.

This Binnsville soil is high in organic matter and fairly high in natural fertility. It has slow infiltration and internal drainage. The available moisture capacity is limited. Tilth is not good.

Erosion is a serious hazard, and intensive conservation practices are required where the soil is cultivated. Practically all of the acreage is in pasture, which provides fair yields when properly fertilized and seeded. Capability unit 39 (A–6, VIe–3).

Binnsville clay, severely eroded gently sloping marly phase (BbC3).—This soil has a high rate of runoff. The available moisture capacity is lower than for the eroded very gently sloping marly phase of Binnsville clay.

Some of this soil has been cultivated in the past. It is now mostly in grass, though some areas are in trees. Erosion is a serious hazard because of the slope and slow infiltration rate. Capability unit 39 (A–6, VIe–3).

Boswell series

The Boswell soils are very gently sloping to moderately steep, moderately well drained, and medium to strongly acid throughout. Their subsoil is firm clay, red in the upper part and mottled in the lower. Sands and clays over clayey sediments were the parent materials. The native vegetation is sweetgum, oak, and pine.

These soils are in the eastern and western edges of the county. They are associated with the better drained Shubuta, Ruston, and Nacogdoches soils. In the eastern part of the county, the Boswell soils are associated with the Lauderdale soils, which are shallow to claystone and have little profile development.

Boswell fine sandy loam, eroded very gently sloping phase (BcB2).—This profile description was taken 7 miles southeast of Decatur on a local road.

A_p 0 to 4 inches, strong-brown (7.5YR 5/6) fine sandy loam; weak fine granular structure; very friable; medium to strongly acid; 4 to 8 inches thick; abrupt to clear boundary.

B_1 4 to 6 inches, yellowish-brown (10YR 5/4) sandy clay loam with a few, faint, distinct, reddish-brown (5YR 5/4) mottles; weak fine subangular blocky structure; friable; strongly acid; 2 to 4 inches thick; clear smooth boundary.

B_2 6 to 20 inches, red (2.5YR 5/8) clay; moderate medium angular blocky structure; firm; strongly acid; 15 to 20 inches thick; clear wavy boundary.

B_3 20 to 40 inches, mottled red (2.5YR 4/8) and yellowish-brown (10YR 5/4) clay; moderate medium angular blocky structure; firm; very plastic when wet, very hard when dry; strongly acid; 20 to 30 inches thick; clear wavy boundary.

C 40 to 56 inches, mottled pale-yellow (5Y 7/3) and red (2.5YR 4/8) clay; moderate medium angular blocky structure; firm; very plastic when wet, very hard when dry; strongly acid.

The thickness of the solum (depth of C horizon) varies with the slope. The surface is normally pale brown to strong brown where cultivated and grayish brown where not eroded. If most of the surface soil has been removed, the surface is red. Small areas of the moderately well drained Shubuta and well drained Nacogdoches soils are included with this soil.

The supplies of organic matter and the natural fertility are low. The soil is medium to strongly acid. It has a slow infiltration rate, and permeability of the subsoil is moderately slow to slow. The available moisture capacity is moderate in the upper part of the profile but low in the lower horizons. The plow layer has fair tilth.

Practically all of this soil was once in cotton. Now, most of it is in pasture, although some has been planted to pine trees. Cotton, sericea lespedeza, small grains, and soybeans are fairly well suited to this soil. Erosion is a danger, however, and conservation must be practiced if the soil is row cropped. It is suitable for sod crops or pine trees. If properly fertilized, limed, and seeded, it produces good pasture. Capability unit 16 (IIIe–6).

Boswell fine sandy loam, eroded gently sloping phase (BcC2).—The 4- to 5-inch plow layer consists of a mixture of the original surface soil and subsoil. It ranges from a pale brown to brown, and there are areas of red in more severely eroded places. The infiltration rate is fairly slow, and internal movement of water is slow. The supply of organic matter and the productivity are low.

Most of this soil has been cultivated, and some still is cultivated. Much of it, however, has reverted to sod and trees. Erosion is a decided hazard, and intensive conservation practices are required if the soil is tilled. The soil is well suited to grass and trees and fairly well suited to most of the commonly grown row crops and small grains. Capability unit 16 (IIIe–6).

Boswell fine sandy loam, eroded sloping phase (BcD2).—The surface layer (A_1 and A_2 horizons) is 2 to 8 inches deep. The thickness of the solum (A and B horizons) is 25 to 30 inches. Runoff is much faster than for Boswell fine sandy loam, eroded very gently sloping phase.

Most of this soil is in trees, although some areas have been cultivated. Erosion is a serious hazard, and very intensive conservation practices are required if the soil is used for pasture. Trees are the most suitable crop. Capability unit 40 (VIe–5).

Boswell fine sandy loam, eroded strongly sloping phase (BcE2).—The surface layer (A_1 and A_2 horizons) ranges from 4 to 8 inches in thickness. The solum (A and B layers) is 20 to 30 inches deep. Runoff is much faster than for Boswell fine sandy loam, eroded very gently sloping phase.

Most of this soil has been cleared and used for crops or pasture. Forestry is the best use, however, and the area is now wooded. Capability unit 40 (VIe–5).

Boswell fine sandy loam, moderately steep phase (BcF).—The depth of the surface layer (A_1 and A_2 horizons) of this soil is 6 to 12 inches. The solum (A and B layers) is 25 to 30 inches deep. Runoff is very much faster than on Boswell fine sandy loam, eroded very gently sloping phase.

This soil is now in forest. The greater slope and surface runoff result in a serious erosion hazard. Capability unit 44 (VIIe–4).

Boswell sandy clay loam, severely eroded gently sloping phase (BdC3).—The 4- to 5-inch plow layer consists essentially of what was formerly the B horizon. It ranges from a red sandy loam to sandy clay loam. The B_2 layer is the same as that of Boswell fine sandy loam, eroded very gently sloping phase.

Tilth is not favorable. The infiltration rate is slow, and the capacity for holding moisture for plants is low. This soil is low in organic matter and in productivity.

Most of this soil has been cultivated. It is now in trees, to which it is suited. Capability unit 41 (VIe–7).

Boswell sandy clay loam, severely eroded sloping phase (BdD3).—The surface layer contains some of the original surface soil but consists mostly of the original subsoil. It ranges from sandy loam to sandy clay loam. Because of the slope and loss of surface soil, runoff is great.

Some of this soil has been cultivated, but most of it is now forested. The slope and surface runoff result in a serious erosion hazard. Forestry is the best use. Capability unit 41 (VIe–7).

Cahaba series

These well-drained, level to gently sloping soils have a medium to strongly acid profile. The surface soil is a light yellowish-brown very fine sandy loam. The yellowish-red sandy clay loam subsoil is underlain by faintly mottled sandy loam at a depth of about 37 inches. These soils were developed from materials washed mainly from the Ruston, Nacogdoches, Ora, and Shubuta soils. The native vegetation is pine, oak, hickory, sweetgum, blackgum, and plum bushes.

The Cahaba soils are mostly in the vicinity of Hickory and south of Conehatta. They are associated with the Tilden and Prentiss soils and the coarser textured Independence soil. Unlike soils in the Tilden and Prentiss series, the Cahaba soils do not have fragipans. They are suitable for cultivation.

Cahaba very fine sandy loam, eroded very gently sloping phase (CaB2).—This profile description was taken 4 miles south of Conehatta on the road between Conehatta and Lake.

A_p 0 to 7 inches, light yellowish-brown (10YR 6/4) very fine sandy loam; fine granular structure; very friable; strongly acid; 10 to 12 inches thick; clear smooth boundary.

B_1 7 to 13 inches, strong-brown (7.5YR 5/6) very fine sandy loam; weak fine granular structure; very friable; medium to strongly acid; 2 to 4 inches thick; clear wavy boundary.

B_2 13 to 27 inches, yellowish-red (5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; strongly acid; 10 to 20 inches thick; clear wavy boundary.

B_3 27 to 37 inches, red (2.5YR 4/6) sandy loam; weak medium subangular blocky structure; friable; strongly acid; 6 to 12 inches thick; gradual wavy boundary.

C 37 to 50 inches, yellowish-red (5YR 5/6) sandy loam with a few faint, distinct, brown (10YR 5/3) and yellow (10YR 7/8) mottles; weak fine granular structure; friable; strongly acid.

The solum (A and B horizons) is 28 to 48 inches deep. The surface layer (A_p horizon) ranges from 10 to 12 inches. There are small inclusions of Independence and Tilden soils.

The soil is low in organic matter. It has a fairly good infiltration rate. Permeability of the subsoil is moderately rapid, and the available moisture capacity is moderate. The plow layer has good tilth.

Practically all of this soil has been cropped, mostly to cotton and corn. Some is used for pasture. The gentle slope, good tilth, and favorable moisture relations make this soil suitable for cultivation, but erosion is a moderate hazard. Where limed and fertilized, this soil is suited to cotton, corn, small grains, and pasture. Capability unit 2 (IIe–1).

Cahaba very fine sandy loam, level phase (CaA).—The plow layer is 10 to 12 inches thick. This soil is deep, level, and well drained. It is normally located near the more sloping Cahaba soils.

This soil is suited to such crops as cotton, corn, small grains, and pasture. Only limited conservation practices are needed for cultivation. Capability unit 1 (I–1).

Cahaba very fine sandy loam, eroded gently sloping phase (CaC2).—The yellowish-brown to red plow layer (A_p horizon) consists of a mixture of remnants of the original surface soil and subsoil. It is 4 to 5 inches deep.

Although this soil is now used for pasture and trees, most of it has been cultivated. It is suitable for row crops and small grains only if conservation practices are used to prevent erosion. Its best use is for sod or pine trees. Capability unit 11 (A-3, IIIe–1).

Catalpa series

The Catalpa soils are nearly level and moderately well drained. They have a very dark grayish-brown clay surface soil. The grayish-brown clayey subsoil has red, gray, and yellow mottles at depths of about 24 to 28 inches. The soils developed from alluvium that washed from the

Binnsville and Sumter soils and similar soils. The native vegetation is elm, oak, hackberry, and ash.

Catalpa soil is confined to the southwestern corner of the county and is associated with the less well drained, acid Houlka and Una soils.

Catalpa clay, local alluvium phase (Cb).—This profile description was taken in a pasture near State Highway No. 505, 3½ miles south of Lawrence, Miss.

0 to 18 inches, very dark grayish-brown (10YR 3/2) clay; medium subangular blocky structure; firm; mildly alkaline; 10 to 30 inches thick; abrupt to clear boundary.

18 to 28 inches, dark grayish-brown (10YR 4/2) clay; firm; alkaline; 10 to 15 inches thick; gradual boundary.

28 to 48 inches, mottled dark grayish-brown (10YR 4/2), red (2.5YR 4/6), and yellow (10YR 7/8) silty clay; alkaline.

The thickness of the surface layer ranges from 10 to 30 inches. There are small inclusions of Houlka soils.

The supply of organic matter is moderate, and the natural fertility is fairly high. This soil has a slow infiltration rate. The permeability of the subsoil is slow, and the capacity to hold moisture available for plants is fair.

Some of this soil has been cropped in previous years, but surface drainage is needed to remove excess surface water. Most of the soil is now in pasture, some of which is improved. The soil is well suited to pasture if properly fertilized and seeded. Capability unit 10 (A–6, IIw–1).

Chastain series

These poorly drained, strongly acid soils developed from alluvial sediments washed down from Boswell, Cuthbert, and similar soils. The surface soil is a gray sandy loam, and the subsoil is a mottled gray and yellow clay. Oak, hickory, elm, and some types of pine are native trees.

Most Chastain soils in this county are west of Hickory and east of Duffee. They occur with the poorly drained Bibb soils. The Chastain soils in this county were placed in one mapping unit. These soils are best suited to grasses and clovers.

Chastain soils (Cc).—In this mapping unit are several Chastain soils. A profile of Chastain fine sandy loam follows. It was taken in a wooded area south of the SCS Mississippi Coastal Plain Branch Experiment Station.

0 to 8 inches, gray (10YR 5/1) fine sandy loam; fine granular structure; friable; strongly acid; 8 to 10 inches thick; clear smooth boundary.

8 to 16 inches, gray (10YR 6/1) and yellow (10YR 7/8) sandy clay loam; friable; strongly acid; 10 to 20 inches thick; gradual boundary.

16 to 36 inches, mottled light-gray (10YR 7/1), yellow (10YR 7/8), brown (7.5YR 5/4), and red (2.5YR 4/6) clay; firm when moist, plastic when wet, and hard when dry; strongly acid.

The surface layer of the Chastain soils ranges from 8 to 10 inches in thickness. The texture of the surface layer is so varied that the soils cannot be separated. The range is from silt loam to sandy loam, commonly within the same delineation.

The soils are low in organic matter and natural fertility. They are strongly acid throughout. Infiltration is fairly slow, and permeability of the subsoil is slow. The available water capacity is low.

Some of the acreage has been cultivated, but the soils are now used for grass and trees. Because of poor drainage and low fertility, these soils are suited to grasses, clovers, and hardwood and pine trees. Capability unit 31 (IVs–1).

Eustis series

These gently sloping to strongly sloping soils are excessively drained and strongly acid. The surface soil is a dark grayish-brown to dark-brown loamy sand. The subsoil is yellowish-brown loamy sand. Internal drainage is rapid. Oak and pine trees are the native vegetation.

Most of these soils are in the vicinity of Decatur and southeast of Newton. They are coarser textured than the associated well-drained Ruston soils. Eustis soils are suitable for limited cultivation.

Eustis loamy sand, gently sloping dark surface phase (EaC).—This profile is from a field 3 miles northwest of Decatur.

A_1 0 to 7 inches, dark grayish-brown (10YR 4/2) loamy sand; weak very fine granular structure; very friable; strongly acid; 8 to 12 inches thick; abrupt smooth boundary.

B_1 7 to 38 inches, yellowish-brown (10YR 5/4) loamy sand; weak very fine granular structure; loose; strongly acid; 30 to 40 inches thick; abrupt smooth boundary.

C_1 38 to 80 inches, reddish-yellow (7.5YR 7/6) loamy fine sand; loose; strongly acid.

The solum (A and B horizons) is from 40 to 50 inches thick. The surface soil (A_1 layer) is 8 to 12 inches deep. It is thinner in places where there has been erosion. There are small inclusions of Ruston soils.

This soil is low in organic matter and in productivity. The infiltration rate and internal movement of water are rapid. The moisture-holding capacity is low. Tilth is good.

Some of this soil has been used for corn and truck crops. The slope and good tilth make it suitable for cultivation, but leaching of fertilizer and a limited capacity for holding moisture make this soil hazardous for cropping. Most of this soil is now wooded. It is best suited to early truck crops or trees. Capability unit 19 (IIIs–1).

Eustis loamy sand, strongly sloping dark surface phase (EaE).—The surface layer is 4 to 12 inches thick. Small rills occur in some places. Runoff is much faster than for Eustis loamy sand, gently sloping dark surface phase.

Most of this strongly sloping soil is on breaks from smoother areas of Eustis loamy sand, gently sloping dark surface phase. Much of this soil is in forest, and it is suited to this use. Capability unit 42 (VIs–1).

Eutaw-Vaiden soils

These level to very gently sloping soils are poorly drained to somewhat poorly drained. They occur in such an intricate pattern that it is not practical to map them separately. The dominant Eutaw is in depressions, and the Vaiden is on the ridges. The solum of these soils is acid, but the lower horizons are neutral to alkaline. The parent material—thin, stratified beds of sand, sandy clay, and clay—overlies calcareous formations at a depth of not more than 48 inches. The native vegetation is predominantly hardwoods, mainly oaks and gums, and some pines.

The Eutaw-Vaiden soils are confined to the southwestern corner of the county. They are known locally as hogwallow prairie. These soils are not suitable for cultivation.

Eutaw-Vaiden clays, level phases (EbA).—These profile descriptions were taken in a wooded area near State Highway No. 505, south of Lawrence, Miss.

Eutaw clay:

A_1 0 to 5 inches, dark-gray (10YR 4/1) clay; moderate medium subangular blocky structure; firm; medium acid; 3 to 6 inches thick; abrupt wavy boundary.

B_1 5 to 8 inches, gray (10YR 6/1) clay with a few, fine, faint, distinct, dark grayish-brown mottles; moderate medium subangular blocky structure; firm; medium acid; 3 to 6 inches thick; abrupt wavy boundary.

B_2 8 to 44 inches, gray (10YR 6/1) clay with common, distinct, yellowish-brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; medium acid; 30 to 40 inches thick; abrupt wavy boundary.

D 44 to 60 inches, white (10YR 8/2) calcareous clay with common, distinct, yellow (10YR 8/6) mottles; moderate medium subangular blocky structure; firm; alkaline.

Vaiden clay:

A_1 0 to 6 inches, gray (10YR 5/1) clay; weak medium subangular blocky structure; medium acid; 6 to 8 inches thick; abrupt wavy boundary.

B_1 6 to 10 inches, brownish-yellow (10YR 6/6) clay with few, fine, distinct, light-gray (10YR 7/2) mottles; moderate medium subangular blocky structure; firm; medium acid; 4 to 6 inches thick; abrupt wavy boundary.

B_2 10 to 45 inches, yellow (10YR 7/6) clay with many, medium, distinct, strong-brown (7.5YR 5/6) and light-gray (10YR 7/1) mottles; moderate medium subangular blocky structure; firm; medium acid; 30 to 40 inches thick; abrupt smooth boundary.

D 45 to 70 inches, white (10YR 8/2) calcareous clay with many, medium, distinct, yellow (10YR 8/6) mottles; moderate medium subangular blocky structure; firm.

The thickness of the solum (depth to D horizon) varies with the location. The surface layer is 3 to 8 inches thick.

These soils are low in organic matter and in natural fertility. They have a slow infiltration rate. Permeability of the subsoil is very slow to slow. The capacity to hold moisture available to plants is limited.

Little of these soils has been cultivated. Intensive farming of these soils is not practical, because of the undulating topography and fine-textured surface soil. Most of the acreage is now wooded, although some is in pasture. Pine trees are especially suitable. Capability unit 32 (IVs-2).

Eutaw-Vaiden clays, very gently sloping phases (EbB).—These soils differ from Eutaw-Vaiden clays, level phases, primarily in slope. The slope does not improve the surface drainage, however, because there are many depressions.

Little of this mapping unit is cultivated. It is suited to pine trees. Capability unit 32 (IVs-2).

Houlka series

These slightly acid to neutral soils are somewhat poorly drained. The very dark gray clay surface soil is underlain by gray mottled clay. Alluvium washed from Vaiden, Eutaw, Boswell, and Sumter soils was the parent material.

One member of the Houlka series is mapped in the southwestern corner of the county. It is associated with the moderately well drained, alkaline Catalpa and the poorer drained Una soils. Limited cultivation is practical for most of the Houlka acreage.

Houlka clay (Ha).—The following profile description was taken in a pasture 3 miles south of Lawrence on State Highway No. 505.

0 to 10 inches, very dark gray (10YR 3/1) clay; strong medium subangular blocky structure; firm; slightly acid; 10 to 15 inches thick; abrupt smooth boundary.

10 to 24 inches, dark-gray clay; firm; slightly acid; 15 to 20 inches thick; gradual boundary.

24 to 40 inches, mottled gray (10YR 5/1), yellow (10YR 7/6), and brown (10YR 5/3) clay; firm; slightly acid.

The surface layer is from 10 to 15 inches thick. Small areas of Una and Catalpa soils are included with this soil. The supply of organic matter is low, but productivity is fairly high. Infiltration is slow, and permeability of the subsoil is slow to very slow. The available moisture capacity is moderate to somewhat limited.

This soil has been cropped, but most of the acreage is now in grass. It is suitable for limited cultivation; however, it is best for grasses and clovers. Capability unit 22 (A-6, IIIw-1).

Independence series

The Independence soils are strongly acid, are somewhat excessively drained, and have a dark-brown loamy fine sand surface soil. The subsoil is a brownish-yellow loamy sand. These soils developed on deep, sandy materials of the stream terraces.

One member of the Independence series is mapped in this county. It is associated with the well-drained, but coarser textured, Cahaba soils. Most areas are suitable for limited cultivation.

Independence loamy fine sand (Ia).—This profile description was taken in a field 1 mile north of Hickory.

A_p 0 to 10 inches, dark-brown (10YR 4/3) loamy fine sand; weak very fine granular structure; very friable; strongly acid; 10 to 15 inches thick; abrupt smooth boundary.

B_2 10 to 36 inches, brownish-yellow (10YR 6/6) loamy fine sand; weak very fine granular structure; very friable; strongly acid; 20 to 30 inches thick; clear wavy boundary.

C 36 to 60 inches, very pale brown (10YR 7/4) fine sand; weak very fine granular structure; very friable; strongly acid.

The depth to the C horizon ranges from 30 to 40 inches. The surface layer is 10 to 15 inches thick. There are small inclusions of Cahaba soils.

This soil is low in organic matter and productivity. It has a rapid rate of infiltration, but the available moisture capacity is low. The profile is strongly acid. The plow layer has good tilth.

Most of this soil has been cropped—much of the time to cotton. It now has reverted to grass and trees, to which it is suited. If this soil is cultivated and fertilizer is applied frequently, it is best suited to early truck crops. Capability unit 19 (IIIs-1).

Iuka series

The Iuka soils are moderately well drained and acid throughout. They have a grayish-brown sandy loam to silt loam surface soil and a yellowish-brown subsoil. The parent material was washed from such soils as the Ruston, Ora, Savannah, and Shubuta.

These soils are located along the streambanks and are better drained than the associated Mantachie, Bibb, and Chastain soils. Most of their acreage is suitable for cultivation.

Iuka fine sandy loam (Ic).—Here is a typical profile taken from a large wooded area southeast of Decatur.

0 to 10 inches, grayish-brown (10YR 5/2) fine sandy loam; weak fine granular structure; very friable; medium to strongly acid; 8 to 12 inches thick; abrupt to clear boundary.

10 to 30 inches, yellowish-brown (10YR 5/6) fine sandy loam; friable; medium to strongly acid; 10 to 20 inches thick; abrupt to clear boundary.
30 to 40 inches, light-gray (10YR 7/2) sandy loam; friable; strongly acid.

The surface layer is 8 to 12 inches thick. Small areas of the well-drained Ochlockonee and the somewhat poorly drained Mantachie soils are included in this soil.

The supply of organic matter is low, but productivity is high. The infiltration rate is fairly good, and internal movement of water is good. The available moisture capacity is moderate to high. The plow layer has good tilth.

Most of this soil is in trees and grass. Small areas have been cleared and planted to crops. Where overflows are not common, the soil is suitable for most of the crops ordinarily grown. Good tilth and favorable moisture relations make this soil suitable for cultivation. Capability unit 9 (A–3, IIw–1).

Iuka very fine sandy loam, local alluvium phase (Ib).—This soil is essentially the same as Iuka fine sandy loam, except that it is in smaller areas and was derived from materials washed from soils nearby. It is suited to most locally grown crops and to pasture and trees. Capability unit 9 (A–3, IIw–1).

Johnston series

The poorly drained, acid Johnston soils have a black to dark-gray organic loam surface soil underlain at about 15 inches by very fine sandy loam. They are normally at the base of slopes and in depressed areas. The large quantity of organic matter in the soils was derived through decay of grasses and woody plants. The native vegetation is sweetgum, blackgum, gallberry, bay bushes, and alder.

Johnston soils are associated with Bibb and Chastain soils. They have about the same drainage rate as Bibb and Chastain soils but contain more organic matter. Cultivation of Johnston soils is practical if they are properly drained. One soil of the Johnston series was mapped in this county.

Johnston loam (Ja).—Here is a profile description from a wooded area 4 miles northwest of Decatur.

0 to 15 inches, black (7.5YR 2/0) loam; weak fine granular structure; friable; medium to strongly acid; 10 to 20 inches thick; abrupt smooth boundary.
15 to 25 inches, very dark gray (10YR 3/1) very fine sandy loam; friable; medium to strongly acid; 10 to 15 inches thick; abrupt smooth boundary.
25 to 50 inches, gray (10YR 6/1) sandy clay; friable; strongly acid.

The depth of the organic matter varies from one location to another. Included in this soil are some small areas of Bibb and Chastain soils.

This soil is highly productive if properly drained. Its available moisture capacity is moderate to high. The plow layer has good tilth.

Some of this soil has been planted to corn, oats, and pasture. If properly drained, it is best suited to corn and pasture. Lime and fertilizer are needed. Capability unit 23 (IIIw–2).

Lauderdale series

These gently sloping to moderately steep, acid soils are well-drained to excessively drained. They have a grayish-brown stony fine sandy loam surface soil and dark-brown sandy clay subsoil in which there is some partially weathered sandstone. The parent material was a sand formation that overlies the Tallahatta (Buhrstone) formation. The native vegetation is gum, oak, dogwood, and pine.

Most of these soils are in the northeastern part of the county along the Lauderdale County line. They are associated primarily with the moderately well drained Boswell and Shubuta soils. The Lauderdale soils are not suitable for cultivation.

Lauderdale stony fine sandy loam, eroded gently sloping phase (LaC2).—This profile description was taken north of Chunky and east of the road running from Chunky to Duffee.

A_p 0 to 6 inches, dark-gray (10YR 4/1) stony fine sandy loam; weak fine granular structure; very friable; strongly acid; 4 to 8 inches thick; clear wavy boundary.
B_1 6 to 12 inches, very dark grayish-brown (10YR 3/2) sandy clay containing partially weathered sandstone; moderate medium subangular blocky structure; firm; strongly acid; 8 to 10 inches thick; clear wavy boundary.
B_2 12 to 30 inches, dark-brown (10YR 3/4) sandy clay containing partially weathered sandstone; moderate medium subangular blocky structure; friable to firm; strongly acid; 15 to 20 inches thick; clear wavy boundary.
D 30 to 60 inches, horizontal beds of gray to brown firmly cemented sandstone.

The depth to the horizontal beds of sandstone ranges from 20 to 40 inches. The surface soil is 4 to 8 inches deep. In this layer of fine sandy loam there are stones of varied size and number. Included in this soil are small patches of Boswell and Shubuta soils.

This soil is low in organic matter. The infiltration rate, internal drainage, and available moisture capacity are variable.

Most of this soil is wooded, and little has ever been cultivated. It is suited to trees. Capability unit 40 (VIe–5).

Lauderdale stony fine sandy loam, sloping to moderately steep phases (LaE).—The surface layer is 3 to 6 inches thick. Runoff is somewhat greater than for Lauderdale stony fine sandy loam, eroded gently sloping phase. This soil is planted to trees, to which it is suited. Capability unit 40 (VIe–5).

Lauderdale-Boswell soils

The Lauderdale-Boswell complex consists of somewhat poorly drained to excessively drained, gently sloping to moderately steep soils. Lauderdale soils developed from a sand formation over Tallahatta (Buhrstone). The Boswell developed from Coastal Plain clays over sandy loam. Gum, oak, dogwood, and pine trees are the native vegetation.

These soils are in the northeastern part of the county. They occur in such an intricate pattern that it is impractical to map them separately. Only a small acreage is suitable for cultivation and pasture.

Lauderdale-Boswell complex, eroded gently sloping phases (LbC2).—Here is a profile description taken north of Chunky near the road running between Chunky and Duffee.

Lauderdale stony fine sandy loam:
A_p 0 to 3 inches, dark-gray (10YR 4/1) stony fine sandy loam; weak fine granular structure; very friable; strongly acid; 4 to 8 inches thick; clear wavy boundary.

B_1 3 to 12 inches, very dark grayish-brown (10YR 3/2) sandy clay containing partially weathered sandstone; strong medium subangular blocky structure; firm; strongly acid; 8 to 10 inches thick; clear wavy boundary.

B_2 12 to 30 inches, dark-brown (10YR 3/4) sandy clay containing partially weathered sandstone; moderate medium subangular blocky structure; firm; strongly acid; 15 to 20 inches thick; clear wavy boundary.

D 30 to 60 inches, horizontal beds of gray to brown firmly cemented sandstone.

Boswell fine sandy loam:

A_1 0 to 4 inches, grayish-brown (2.5Y 5/2) fine sandy loam; weak fine granular structure; very friable; strongly acid; 3 to 4 inches thick; abrupt smooth boundary.

A_2 4 to 7 inches, brown (10YR 5/3) fine sandy loam; weak fine granular structure; very friable; strongly acid; 3 to 5 inches thick; clear smooth boundary.

B_1 7 to 10 inches, dark-brown (7.5YR 4/4) silty clay; strong medium subangular blocky structure; friable to firm; strongly acid; 3 to 4 inches thick; abrupt wavy boundary.

B_2 10 to 18 inches, yellowish-red (5YR 4/6) clay; strong medium subangular blocky structure; firm; hard when dry, plastic when wet; strongly acid; 8 to 10 inches thick; abrupt wavy boundary.

B_3 18 to 23 inches, dark-brown (7.5YR 4/4) silty clay with a few, fine, faint, distinct, strong-brown (7.5YR 5/6) and light olive-brown (2.5Y 5/4) mottles; moderate medium subangular blocky structure; friable to firm; strongly acid; 4 to 6 inches thick; abrupt wavy boundary.

D 23 to 60 inches, mottled dark-brown (7.5YR 4/4) and pale-yellow (2.5Y 8/4) stony clay loam; weak medium subangular blocky structure; friable to firm; strongly acid.

In this complex, the solum is 20 to 30 inches deep. The surface soil (the A layers) is from 3 to 8 inches thick. The texture of the surface soil may be fine sandy loam, clay loam, stony fine sandy loam, or stony sandy loam. There are small inclusions of Shubuta and Ruston soils.

The soils of this complex are low in organic matter. The infiltration rate, internal drainage, and available moisture capacity are variable. Capability unit 40 (VIe–5).

Lauderdale-Boswell complex, eroded sloping phases (LbD2).—The surface layer is from 3 to 6 inches thick. Runoff is much faster than for Lauderdale-Boswell complex, eroded gently sloping phases.

Only a small part of this soil complex has ever been cultivated. It is used chiefly for trees, to which it is suited. Capability unit 40 (VIe–5).

Lauderdale-Boswell complex, strongly sloping and moderately steep phases (LbE).—The surface layer varies in texture and in depth from one location to another. Runoff is greater than for the Lauderdale-Boswell complex, eroded gently sloping phases. This complex is best suited to trees. Capability unit 40 (VIe–5).

Mantachie series

The somewhat poorly drained, strongly acid Mantachie soils have a yellowish-brown to gray fine sandy loam surface soil and light-gray fine sandy loam subsoil. They have developed from materials washed from such soils as the Ruston, Ora, Savannah, and Shubuta. Hardwoods and shortleaf pines are the native vegetation.

These soils occur in all parts of the county and are associated with the better drained Iuka and the poorer drained Bibb soils. With proper drainage, Mantachie soils are suitable for cultivation (fig. 3).

Figure 3. **Drainage ditch in Mantachie soils.**

Mantachie soils (Ma).—The following profile description of Mantachie fine sandy loam was taken in a field along Chunky Canal 5 miles east of Decatur.

0 to 8 inches, yellowish-brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable; medium to strongly acid; 8 to 12 inches thick; abrupt clear boundary.

8 to 22 inches, light-gray (10YR 7/1) fine sandy loam; very friable; medium to strongly acid; 10 to 20 inches thick; abrupt clear boundary.

22 to 40 inches, light-gray (10YR 7/1) very fine sandy clay loam; friable; strongly acid.

The surface soil ranges from 8 to 12 inches in depth and from silt loam to sandy loam in texture. These ranges commonly occur within one area. Included with this soil are small areas of Iuka and Bibb soils.

The supply of organic matter is low, but productivity is fairly high. The infiltration rate is fairly good. Internal water movement and available moisture capacity are moderate. The surface layer has good tilth.

Most of this soil is in trees and pasture. If properly drained, it will produce good pasture (fig. 4), as well as corn, soybeans, sorghum, and similar row crops. A complete drainage system, including row arrangement and V-type or W-type ditches and secondary ditches, is needed. Capability unit 21 (A–3, IIIw–1).

Mantachie very fine sandy loam, local alluvium phase (Mb).—This soil developed from alluvium that was washed from local areas. It is used primarily for row crops and pasture. If drainage is provided, it is suited to row crops, pasture, and trees. Capability unit 21 (A 3, IIIw–1).

Mayhew series

These soils are nearly level to very gently sloping, poorly drained, and acid throughout. The surface soil is a dark grayish-brown sandy clay loam. The grayish-brown to yellowish-brown sandy clay subsoil is mottled with yellow and gray. The parent material was thick beds (more than 4 feet deep) of micaceous sandy clays.

These soils are associated with the better drained Sawyer and Vaiden series in the southwestern part of the county adjacent to the prairie. Pasture is a suitable use.

Figure 4.—**Good stand of fescue on Mantachie soils.**

Mayhew fine sandy clay loam, nearly level phase (McA).—Here is a profile description taken in a pasture along United States Highway No. 80, one mile west of Lawrence.

A_p 0 to 7 inches, dark grayish-brown (10YR 4/2) sandy clay loam; weak fine subangular blocky structure; friable; medium to strongly acid; 6 to 8 inches thick; abrupt smooth boundary.

B_2 7 to 16 inches, grayish-brown (10YR 5/2) to yellowish-brown (10YR 5/4) sandy clay mottled with shades of gray and yellow; moderate medium subangular blocky structure; firm; medium to strongly acid; 8 to 10 inches thick; abrupt smooth boundary.

C 16 to 48 inches, light-gray (10YR 7/1) clay with a few, fine, faint, distinct, yellowish-brown (10YR 5/4) mottles; strong medium subangular blocky structure; firm to very firm; medium acid; 20 to 40 inches thick.

The solum, or the part of the profile above the C horizon, is 15 to 20 inches deep. The surface soil (A layer) is from 6 to 8 inches thick, but there are small areas where practically all the surface soil has been lost. These areas are on sharp breaks where erosion has been severe. There are small inclusions of Eutaw-Vaiden soils and some of Sawyer soils.

The supply of organic matter and the fertility are low. This medium to strongly acid soil has a slow infiltration rate. Permeability of the subsoil is slow. The available moisture capacity is somewhat limited.

A part of this soil has been cropped, but the nearly level relief, clay texture, and poor drainage make cultivation unfavorable. The soil is now used mostly for trees and pasture. Where properly fertilized, limed, and seeded, it is best suited to pasture. Surface water should be removed by V- or W-type ditches. Capability unit 33 (IVs–4).

Mayhew fine sandy clay loam, very gently sloping phase (McB).—The surface soil is lighter colored, and surface drainage is better for this soil than for Mayhew fine sandy clay loam, nearly level phase.

Although most of this soil has been cultivated, it is now used for pasture and trees. It is suited to special crops as well as pasture but requires proper management. Capability unit 30 (IVe–9).

Myatt series

These poorly drained soils are in level to slightly depressed areas. They have a gray very fine sandy loam surface soil. The subsoil is a mottled gray sandy clay. Fragipans occur at a depth of about 28 inches. These soils developed from old alluvium washed from the Shubuta, Ruston, Ora, and Savannah soils. The native vegetation is oak, gum, ash, pine, and bay bushes.

These soils are not tillable. One soil of the series is mapped in the county. It is associated with the better drained Tilden, Prentiss, and Stough soils.

Myatt very fine sandy loam (Md).—The following profile was taken along State Highway No. 494, east of Perdue.

A_1 0 to 2 inches, gray (10YR 5/1) very fine sandy loam; weak fine granular structure; very friable; strongly acid; 2 to 4 inches thick; abrupt wavy boundary.

A_2 2 to 13 inches, gray (10YR 6/1) very fine sandy loam with many, fine, distinct, yellowish-brown (10YR 5/4) mottles; weak fine subangular blocky structure; friable; strongly acid; 10 to 15 inches thick; clear smooth boundary.

B_1 13 to 16 inches, light-gray (10YR 7/1) very fine sandy loam faintly mottled with shades of yellow and brown; weak fine subangular blocky structure; friable; medium to strongly acid; 3 to 5 inches thick; clear wavy boundary.

B_2 16 to 28 inches, gray (10YR 5/1) sandy clay with many, medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; strongly acid; 10 to 20 inches thick; clear wavy boundary.

B_{3m} 28 to 38 inches, light brownish-gray (10YR 6/2) sandy clay loam with many, fine, distinct, yellowish-brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; strongly acid; 6 to 10 inches thick; clear smooth boundary.

C 38 to 50 inches, mottled grayish-brown (10YR 5/2), red (2.5YR 4/6), and yellowish-brown (10YR 5/6) sandy clay; moderate medium subangular blocky structure; firm; strongly acid.

The thickness of the solum (depth to the C horizon) is 30 to 40 inches. The surface soil (A layers) is from 10 to 15 inches deep and, in depressed areas, may be deeper. There are small inclusions of the better drained Stough soils.

This strongly acid soil is low in organic matter and natural fertility. It has a slow infiltration rate, and the permeability of the subsoil is slow. The available moisture capacity is limited.

Some of this soil has been cultivated, but it is now used for pasture and trees. The poor surface and internal drainage make it unfavorable for cultivation. Where properly fertilized, limed, and seeded, it will produce very good pasture if drainage is used to remove excess surface water. Capability unit 35 (Vs–1).

Nacogdoches series

These very gently sloping to moderately steep soils are well drained and medium acid to strongly acid throughout. They have a yellowish-red loam surface soil and a dark-red clay subsoil. The parent material was derived mainly from thin beds of clay and sandy clay over volcanic tuff or greensands. Oak, gum, hickory, and pine are the native vegetation.

These soils occupy a strip running southeast from Union to north of Chunky.

They are associated with the Shubuta and some of the Boswell soils, but they have a darker color than those soils.

Nacogdoches loam, eroded very gently sloping phase (NaB2).—This profile was made in a field near a local road 6 miles east of Decatur.

- A_p 0 to 6 inches, yellowish-red (5YR 5/8) loam; weak fine subangular blocky structure; friable; medium acid; 4 to 7 inches thick; abrupt smooth boundary.
- B_2 6 to 24 inches, dark-red (2.5YR 3/6) clay; moderate medium subangular blocky structure; strongly acid; 20 to 30 inches thick; abrupt smooth boundary.
- B_3 24 to 65 inches, dark-red (2.5YR 3/6) sandy clay with a few, medium, distinct, brownish-yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; friable; strongly acid; 15 to 45 inches thick.
- C 65 to 100 inches, dark-red (2.5YR 3/6) clay with strong-brown (7.5YR 5/6) mottles; strong medium subangular blocky structure; firm.

The solum (material above the C horizon) is 40 to 70 inches thick. The surface layer (A horizon) is from 4 to 8 inches deep, and there are small areas where all the surface soil has been lost. Included with this soil are small areas of Ruston and Shubuta soils.

The soil is low in organic matter, but it responds well to good management. The infiltration rate is fairly good, and the capacity for holding moisture for plants is moderate. The plow layer has good tilth.

Most of this soil has been cropped—largely to corn and cotton. It is still used primarily for row crops. The slope, good tilth, and favorable moisture relations make it suitable for cultivation, but erosion is a moderate hazard. This soil will produce good pasture when limed, fertilized, and seeded. Capability unit 4 (IIe-3).

Nacogdoches loam, eroded gently sloping phase (NaC2).—The surface layer (A_p horizon) is 4 to 6 inches deep. The subsoil is exposed in some places, especially on the stronger slopes. Runoff is much faster than for Nacogdoches loam, eroded very gently sloping phase.

Practically all of this soil has been cultivated, and it is still used for row crops. Cultivation requires intensive conservation practices because the slope and surface runoff encourage erosion. This soil is suitable for row crops, pasture, and trees. Capability unit 14 (IIIe-3).

Nacogdoches loam, eroded sloping phase (NaD2).—The surface soil (A_p horizon) is 2 to 4 inches thick. The depth of the solum (A and B horizons) varies with the location. Runoff is much faster than for Nacogdoches loam, eroded very gently sloping phase.

Most of this soil has been cultivated, and some is still used for row crops. Erosion is a serious hazard, and intensive conservation practices are required if the soil is cultivated. It is best to use this soil for pasture and trees. Capability unit 26 (IVe-3).

Nacogdoches loam, strongly sloping phase (NaE).—The depth of the solum varies with the location on the slope. The surface soil ranges from 8 to 10 inches in thickness. Runoff is much faster on this soil than on Nacogdoches loam, eroded very gently sloping phase.

Little of this soil has been cultivated. Most of it is used for trees, to which it is well suited. Capability unit 36 (VIe-1).

Nacogdoches loam, eroded strongly sloping phase (NaE2).—The solum is 30 to 50 inches deep, but the surface soil is only 4 to 6 inches thick. This soil has a more rapid runoff than Nacogdoches loam, eroded very gently sloping phase.

Some areas have been cultivated, but trees are now on much of the soil. Less eroded areas are in pasture. Capability unit 36 (VIe-1).

Nacogdoches loam, eroded moderately steep phase (NaF2).—A surface layer, 4 to 6 inches thick, covers most of this soil, but in some areas the subsoil is exposed. The steep slopes and rapid runoff make erosion a serious hazard. This soil is used chiefly for forest. Capability unit 43 (VIIe-1).

Nacogdoches sandy clay loam, severely eroded very gently sloping phase (NbB3).—The 4- to 5-inch plow layer consists of a mixture of original surface soil and subsoil. The surface layer ranges from a fine sandy loam in the eroded spots to a sandy clay loam in the severely eroded areas.

Tilth is less favorable and infiltration is slower than for Nacogdoches loam, eroded very gently sloping phase. Response to fertilization is best where the plow layer is less subject to leaching. Capability unit 5 (IIe-4).

Nacogdoches sandy clay loam, severely eroded gently sloping phase (NbC3).—A mixture of original surface soil and subsoil makes up the 4- to 5-inch plow layer. This layer ranges from a sandy clay loam to clay in the more eroded areas. Infiltration is slower, runoff is more rapid, and the ability to hold moisture available is lower than for the uneroded phases of Nacogdoches soils. Tilth is unfavorable.

Although much of this soil is now in pasture and some is in trees, practically all of it has been cultivated. It is fairly good for row crops and pasture. It requires intensive conservation practices, however, because erosion is a decided hazard. Capability unit 15 (IIIe-4).

Nacogdoches sandy clay loam, severely eroded sloping phase (NbD3).—The 4- to 5-inch plow layer, a mixture of the original surface soil and subsoil, ranges from a dark-red sandy clay loam to a clay. Runoff is very rapid.

Most of this soil has been cultivated, but it is now in trees and grass. The strong slope and rapid surface runoff result in an erosion hazard. Capability unit 27 (IVe-4).

Nacogdoches sandy clay loam, severely eroded strongly sloping phase (NbE3).—The 2- to 3-inch surface layer is a mixture of subsoil and remnants of the original surface soil. Rills and gullies are present. Runoff is rapid, and erosion is a serious hazard. Although some of this soil has been cultivated, it has reverted to trees. Capability unit 36 (VIe-1).

Ochlockonee series

These are level, well-drained, strongly acid soils on sandy alluvium of the Coastal Plain. A grayish-brown fine sandy loam makes up the surface soil. The subsoil is a brown fine sandy loam that grades to a yellowish-brown fine sandy clay loam at a depth of about 36 inches. The native vegetation is gum, oak, maple, ash, hickory, and pine.

The Ochlockonee soils are associated with Iuka and Mantachie, but they are better drained than either. Ochlockonee soils are suitable for cultivation. One soil of this series was mapped in the county.

Ochlockonee fine sandy loam, local alluvium phase (Oa).—The following describes a profile taken 4 miles

north of Decatur in a field that borders the road running from Decatur to Stratton.

0 to 10 inches, grayish-brown (10YR 5/2) fine sandy loam; weak fine granular structure; very friable; strongly acid; 8 to 12 inches thick; abrupt clear boundary.
10 to 36 inches, brown (10YR 5/3) fine sandy loam; friable; strongly acid; 25 to 30 inches thick; abrupt clear boundary.
36 to 50 inches, yellowish-brown (10YR 5/6) fine sandy clay loam with a few, fine distinct, yellow (10YR 7/6) and gray (10YR 6/1) mottles; friable; strongly acid.

The soil is usually free of mottles to a depth of 36 inches. There are small inclusions of the somewhat less well drained Iuka soils.

Although the supply of organic matter is low, the productivity of this soil is good. The infiltration rate is fairly good, internal movement of water is medium to rapid, and the available moisture capacity is good. The plow layer has good tilth.

Practically all this soil is used for row crops. Its slope, productivity, and favorable moisture supply make it well suited to row crops, pasture, and trees. Cotton, corn, sorghum, small grains, truck crops, and soybeans are commonly grown. Correct arrangement of crop rows and of V-type and W-type ditches is needed for proper drainage. Capability unit 9 (A–3, IIw–1).

Ora and Dulac soils

The Ora and Dulac soils are level to sloping, moderately well drained to well drained, and acid throughout. They occur in an irregular pattern and, therefore, are mapped together.

The surface soils range from dark-gray silt loam to grayish-brown fine sandy loam. Yellowish-red to strong-brown silty clay loam and sandy clay loam make up the subsoil.

The Ora soils have developed from unconsolidated beds of acid sands, sandy loams, and sandy clays. The parent material of the Dulac soils was a thin mantle of loess underlain by acid sandy clays. Oak, hickory, dogwood, elm, blackgum, and pine are native vegetation.

Most areas of these soils are near Newton, Hickory, Decatur, and Conehatta. These soils are associated with the Ruston, Shubuta, and less well drained Savannah and Franklinton soils. Fragipans occur in the Ora and Dulac soils but not in the Ruston and Shubuta soils.

Ora and Dulac soils, eroded very gently sloping phases (OcB2).—The following describes profiles in a field 4 miles north of Decatur.

Ora very fine sandy loam:

A_p 0 to 7 inches, grayish-brown (10YR 5/2) very fine sandy loam; weak fine granular structure; very friable; strongly acid; 8 to 10 inches thick; abrupt smooth boundary.
B_1 7 to 10 inches, light yellowish-brown (10YR 6/4) fine sandy loam; weak fine subangular blocky structure; friable; strongly acid; 2 to 3 inches thick; abrupt smooth boundary.
B_2 10 to 23 inches, yellowish-red (5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; strongly acid; 10 to 20 inches thick; abrupt wavy boundary.
B_{2m} 23 to 53 inches, yellowish-red (5YR 5/6) fine sandy loam with reddish-yellow (7.5YR 6/6) mottles; moderate medium subangular blocky structure; friable; strongly acid; 30 to 45 inches thick; abrupt wavy boundary.
C 53 to 75 inches, reddish-yellow (5YR 6/6) fine sandy loam with pinkish-white (5YR 8/2) mottles; weak medium subangular blocky structure; friable; strongly acid.

Dulac silt loam:

A_p 0 to 6 inches, grayish-brown (10YR 5/2) silt loam; weak fine granular structure; friable; strongly acid; 8 to 10 inches thick.
B_1 6 to 8 inches, light yellowish-brown (10YR 6/4) light sandy clay loam; weak fine subangular blocky structure; friable; strongly acid; 2 to 3 inches thick; abrupt clear boundary.
B_2 8 to 23 inches, yellowish-red (5YR 4/6) silty clay loam; moderate medium subangular blocky structure; friable; strongly acid; 10 to 20 inches thick; abrupt wavy boundary.
B_{2m} 23 to 62 inches, yellowish-brown (10YR 5/8) fine sandy loam with red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; friable; strongly acid; 30 to 50 inches thick; abrupt wavy boundary.
D 62 inches+, red (2.5YR 4/8) sandy clay loam with yellowish-brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable.

The surface soil ranges from 6 to 10 inches in thickness. The solum ranges from 40 to 70 inches in thickness. Small areas of Savannah, Franklinton, and Ruston soils are included with this soil.

This soil is low in organic matter, but the productivity is good. The infiltration rate is fair. The available water capacity is low in the pan, but it is moderate above this layer. Internal movement of water is medium above the pan but slow in the pan. Tilth is good in the plow layer.

Most of this mapping unit has been cultivated. A considerable acreage is still used for cotton and corn. Some is in pasture (fig. 5). The gentle slope, good tilth, and favorable moisture relations make this mapping unit suitable for most crops. Erosion is a moderate hazard. Capability unit 7 (IIe–7).

Figure 5.—**Pasture on Ora and Dulac soils.**

Ora and Dulac soils, very gently sloping phases (OcB).—The 5- to 6-inch plow layer is darker gray at the surface than the plow layer of Ora and Dulac soils, eroded very gently sloping phases. These soils occur on top of the more sloping areas occupied by Ora and Dulac soils and have slopes of 2 to 3 percent.

Corn and cotton are grown on most of this mapping unit. It is suitable for row crops, small grains, and pas-

ture if it is limed, fertilized, and properly seeded. Capability unit 7 (IIe–7).

Ora and Dulac soils, gently sloping phases (OcC). The depth of the surface soil is 6 to 8 inches. Row crops cover most of this mapping unit, but some of it is used for pasture. Because of the stronger slopes, intensive conservation practices are needed if the soil is cultivated. It is suited to sod crops and pine trees. Capability unit 17 (IIIe–7).

Ora and Dulac soils, eroded gently sloping phases (OcC2).—This mapping unit is on slopes that break from smoother areas occupied by other Ora and Dulac soils. The surface soil is from 4 to 6 inches deep, but on the stronger slopes the subsoil is exposed in some places. More water runs from this mapping unit than from Ora and Dulac soils, eroded very gently sloping phases (fig. 6).

Figure 6. —**Vegetated outlet on Ora and Dulac soils.**

At one time most of this mapping unit was used for cotton, corn, and other row crops. It is now grazed. Pasture is a good use if the land is limed, fertilized, and properly seeded. The soil is also suitable for pine trees. Capability unit 17 (IIIe-7).

Ora and Dulac soils, severely eroded gently sloping phases (OcC3).—The sandy loam to silt loam plow layer is a mixture of surface soil and subsoil. The infiltration rate is much slower, runoff is more rapid, and the ability to hold available moisture is lower than for Ora and Dulac soils, eroded very gently sloping phases.

Practically all of this soil has been cropped. Since erosion is a problem where the soils are cultivated, trees and grasses are grown on most of this acreage. Capability unit 30 (IVe–9).

Ora fine sandy loam, eroded sloping phase (ObD2).—This mapping unit occurs on slopes that break from smoother areas of Ora and Dulac soils. The surface soil is 4 to 5 inches deep. The depth of the profile to the pan varies with the location. More water runs from this soil than from the eroded very gently sloping phases of Ora and Dulac soils.

Not much of this mapping unit has been in cultivation. Erosion is a serious hazard, and very intensive conservation practices are required if the soil is frequently disturbed. This soil is best suited to sod crops and trees. Capability unit 29 (IVe–8).

Prentiss series

These moderately well drained, medium acid to strongly acid soils range from level to sloping. They have a light brownish-gray very fine sandy loam surface soil and yellow to brownish-yellow sandy clay loam subsoil. The parent material was old alluvium washed from Ruston, Shubuta, Ora, and associated soils.

These Prentiss soils are associated with the better drained Cahaba soils. The Tilden soils have about the same drainage as the Prentiss but have a browner B horizon. Prentiss soils are better drained than the associated poorly drained Stough. The Prentiss soils are suitable for cultivation.

Prentiss very fine sandy loam, very gently sloping phase (PaB).—The following describes a profile taken from a cultivated field 2 miles south of Newton on the west side of State Highway No. 15:

A_p 0 to 6 inches, light brownish-gray (10YR 6/2) very fine sandy loam; weak fine granular structure; very friable; strongly acid; 8 to 10 inches thick; abrupt wavy boundary.

A_2 6 to 11 inches, very pale brown (10YR 7/4) very fine sandy loam; weak fine granular structure; very friable; strongly acid; 3 to 5 inches thick; clear smooth boundary.

B_1 11 to 15 inches, yellow (10YR 7/6) fine sandy clay loam; weak fine subangular blocky structure; friable; strongly acid; 4 to 6 inches thick; clear smooth boundary.

B_2 15 to 29 inches, brownish-yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; firm; strongly acid; 10 to 20 inches thick; gradual wavy boundary.

B_{3m} 29 to 56 inches, mottled gray (10YR 6/1), yellow (10YR 7/6), and brown (10YR 5/3) fine sandy loam; moderate medium to coarse angular blocky structure; firm; strongly acid; 30 to 40 inches thick; gradual wavy boundary.

C 56 to 70 inches, mottled brownish-yellow (10YR 6/8), yellowish-brown (10YR 5/4), and gray (10YR 6/1) light sandy clay loam; moderate medium subangular blocky structure; friable; strongly acid.

The solum (layers above C horizon) is 40 to 60 inches thick. The A layers range from 8 to 10 inches in thickness. Small areas of the better drained Tilden and the poorer drained Stough soils have been included in this mapping unit.

The soil is low in organic matter, but productivity is good. It has a fair infiltration rate. Internal drainage is medium above the pan, but the pan layer slows down the movement of water. The available moisture capacity is moderate above the pan, but it is low in that layer. The tilth is good.

Corn and cotton have been grown on much of this soil. Some acreage is now used for pasture. If properly fertilized, limed, and seeded, this soil is suitable for row crops and also provides good pasture. Capability unit 7 (IIe 7).

Prentiss very fine sandy loam, level phase (PaA).—The 8- to 10-inch plow layer is darker than that of Prentiss very fine sandy loam, very gently sloping phase.

Most of this soil has been cropped to cotton and corn. Much of it is now in pasture. The slope and good tilth make the soil favorable for cultivation. It is suited to row crops, small grains, and pasture if fertilized, limed, and properly seeded. The level surface, however, presents

a problem during periods of long rainfall. Capability unit 8 (IIs–1).

Prentiss very fine sandy loam, eroded very gently sloping phase (PaB2).—In the more eroded spots, a mixture of the original surface soil and the upper part of the subsoil makes up the 4- to 6-inch plow layer. The surface soil is browner than that of Prentiss very fine sandy loam, very gently sloping phase.

Most of this soil has been cropped to cotton and corn. If limed, fertilized, and seeded, the soil is well suited to row crops, small grains, and grasses. Most of the acreage is now covered by pasture. Capability unit 7 (IIe–7).

Prentiss very fine sandy loam, eroded gently sloping phase (PaC2).—The 4- to 5-inch plow layer consists of remnants of the original surface soil mixed with subsoil material. Runoff is much faster than for Prentiss very fine sandy loam, very gently sloping phase.

Most of this easily eroded soil occurs on slopes that break from smoother areas of Prentiss soils. It has been cultivated, but pasture and trees now occupy much of the acreage, and these are probably the best uses for the soil (fig. 7). Capability unit 17 (IIIe–7).

Figure 7.—**Coastal bermudagrass on Prentiss very fine sandy loam, eroded gently sloping phase.**

Prentiss very fine sandy loam, eroded sloping phase (PaD2).—The surface layer is 4 to 6 inches thick. In places it is a mixture of the original surface soil and subsoil. Runoff is faster than on the very gently sloping phase of Prentiss very fine sandy loam.

This soil is mainly on very sharp breaks adjacent to smoother areas. The thickness of the surface soil and depth to the pan vary from one location to another. Erosion is a serious hazard. Little of the soil has been cultivated. It is suited to forest and pasture. Capability unit 29 (IVe–8).

Ruston series

These very gently sloping to moderately steep soils are well drained and strongly acid throughout. They developed from thick beds of acid sandy clay loam that in places contain layers of sand, sandy clay, or loamy sand.

The surface soil is grayish-brown to pale-brown fine sandy loam, and the subsoil is yellowish-red sandy clay loam. The native vegetation is loblolly, shortleaf, and some longleaf pine, oak, hickory, persimmon, and dogwood

The largest areas of these soils are west of Decatur and south of Chunky and Hickory. Associated soils are the Nacogdoches, Shubuta, Ora, and Savannah-Franklinton. The Ruston soils do not have fragipans, as do the Ora and Shubuta. They are not so fine textured as the Nacogdoches and Shubuta soils. The Ruston soils on milder slopes are suitable for cultivation.

Ruston fine sandy loam, eroded very gently sloping phase (RaB2).—Here is a description of a typical profile of this soil.

A_p 0 to 7 inches, grayish-brown (10YR 5/2) fine sandy loam; weak fine granular structure; very friable; strongly acid; 6 to 10 inches thick; clear smooth boundary.

A_3 7 to 10 inches, pale-brown (10YR 6/3) sandy loam; weak fine granular structure; very friable; strongly acid; 3 to 6 inches thick; clear abrupt boundary.

B_1 10 to 13 inches, yellowish-red (5YR 5/6) light sandy clay loam; weak fine to medium subangular blocky structure; friable; strongly acid; 3 to 6 inches thick; clear smooth boundary.

B_2 13 to 26 inches, yellowish-red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; strongly acid; 12 to 20 inches thick; clear abrupt boundary.

B_3 26 to 32 inches, yellowish-red (5YR 5/8) sandy clay loam; weak fine to medium subangular blocky structure; friable; strongly acid; 4 to 10 inches thick; clear wavy boundary.

C 32 to 50 inches, strong-brown (7.5YR 5/8) fine sandy loam; weak fine subangular blocky structure; friable; strongly acid.

The soil thickness down to the C horizon ranges from 30 to 50 inches. The A layers are 10 to 15 inches deep, although there are places where practically all the surface soil has been removed. Included in this soil are small areas of Ora, Shubuta, Nacogdoches, and Savannah soils.

The soil is low in organic matter, but its productivity is high. The infiltration rate and the internal movement of water are good. The capacity of the soil for holding moisture available to plants is moderate, and the permeability is moderately rapid. The plow layer has good tilth.

Practically all this soil has been cultivated, much of the time to cotton and corn. Erosion is only a moderate threat. The gentle slopes, good tilth, and favorable moisture conditions make the soil well suited to cultivated crops and pasture if it is limed, fertilized, and properly seeded. It is planted extensively to row crops. Capability unit 2 (IIe–1).

Ruston fine sandy loam, very gently sloping phase (RaB).—The surface layer—lighter colored than that of Ruston fine sandy loam, eroded very gently sloping phase—is 10 to 12 inches deep. The slopes range from 3 to 4 percent.

This soil is associated with the more sloping Ruston soils. Most of it has been cultivated to cotton and corn. Although it is still used for these plants, it is suitable for all crops. The need for special conservation practices is limited if other management is good. Capability unit 2 (IIe–1).

Ruston fine sandy loam, severely eroded very gently sloping phase (RaB3).—A mixture of the original surface soil and subsoil makes up the plow layer. It ranges from

brown to yellowish-red fine sandy loam to sandy loam. The infiltration rate is slower, and the tilth is not so good as for Ruston fine sandy loam, eroded very gently sloping phase. Response to fertilization is greater, however, because the plow layer is less subject to leaching.

All of this soil was once cultivated. Erosion is a decided hazard, and, since much of the acreage is still cropped, moderate conservation practices are needed. The soil is capable of supporting good pasture under proper management. Pine trees are also suitable. Capability unit 3 (IIe-2).

Ruston fine sandy loam, gently sloping phase (RaC).—The surface layer is 10 to 12 inches thick. This depth, however, varies from one area to another. The thickness of the solum is 30 to 40 inches. Runoff is faster than for the eroded very gently sloping phase of Ruston fine sandy loam.

This soil is located near smoother areas of Ruston, Ora, Savannah-Franklinton, and Shubuta soils. It has been cultivated chiefly for cotton and corn. Erosion is a danger on the stronger slopes; consequently, most areas are better for grass and trees. Capability unit 11 (A-3, IIIe-1).

Ruston fine sandy loam, eroded gently sloping phase (RaC2).—The surface layer ranges from 4 to 6 inches in thickness, but the subsoil is exposed on the stronger slopes. The solum is 25 to 40 inches thick. Runoff is faster than for Ruston fine sandy loam, eroded very gently sloping phase.

This soil is on slopes near the more nearly level Ruston, Ora, Shubuta, and Savannah-Franklinton soils. It has been cultivated for cotton and corn, but much of this soil is now in pasture and woods. The slopes make erosion a hazard, and row cropping requires intensive conservation practices. The soil responds well if fertilizer is applied, and it is probably best for grass and trees. Capability unit 11 (A-3, IIIe-1).

Ruston fine sandy loam, severely eroded gently sloping phase (RaC3).—The plow layer, a mixture of the original surface soil and the subsoil, ranges from a brown to reddish-yellow fine sandy loam to sandy loam. Infiltration is slow. Runoff is rapid. The ability to hold moisture available to plants is low.

Although once cultivated, this soil is now used for pasture and trees. Erosion is a decided hazard, and intensive conservation practices are required where the soil is cultivated. This soil is suited to pasture or trees. Capability unit 13 (IIIe-2).

Ruston fine sandy loam, sloping phase (RaD).—The surface layer of this soil is 8 to 10 inches deep, and the solum, 20 to 40 inches. This soil has a faster runoff than Ruston fine sandy loam, eroded very gently sloping phase.

Practically all of this soil is on slopes near more nearly level areas of Ruston, Shubuta, Ora, and Savannah-Franklinton soils. It is now wooded, but some areas have been cultivated. If this soil is cropped, intensive conservation practices are necessary to control erosion. Capability unit 24 (IVe-1).

Ruston fine sandy loam, eroded sloping phase (RaD2).—The surface layer is 4 to 5 inches deep. The thickness of the solum ranges from 20 to 30 inches. Runoff is rapid.

Like Ruston fine sandy loam, sloping phase, this soil occurs on slopes breaking from the more nearly level areas that are occupied by other Ruston soils and by soils associated with Ruston soils.

Most of this soil has been cultivated, but it is now used for pasture or trees. Erosion is serious, and cultivation makes very intensive conservation practices necessary. Capability unit 24 (IVe-1).

Ruston fine sandy loam, severely eroded sloping phase (RaD3).—A mixture of original surface soil and subsoil makes up the plow layer, which is reddish yellow and ranges from fine sandy loam to sandy loam. A great amount of water runs off this soil.

Most of the acreage was once cultivated, but it is now in forest. The strong slopes make erosion a serious hazard. Capability unit 25 (IVe-2).

Ruston fine sandy loam, strongly sloping phase (RaE).—The surface soil is 8 to 12 inches deep, and the solum ranges from 30 to 40 inches in thickness. This soil has much faster runoff than Ruston fine sandy loam, eroded very gently sloping phase, because it occurs on strong slopes that break to smoother areas occupied by other Ruston soils.

Little of this soil has been cultivated; practically all of it is used for forest. Capability unit 36 (VIe-1).

Ruston fine sandy loam, eroded strongly sloping phase (RaE2).—The surface layer is 4 to 6 inches thick, and the depth of the solum ranges from 25 to 40 inches. Runoff is rapid.

Some of this soil has been cultivated, but it is now used for pasture or forest (fig. 8). Capability unit 36 (VIe-1).

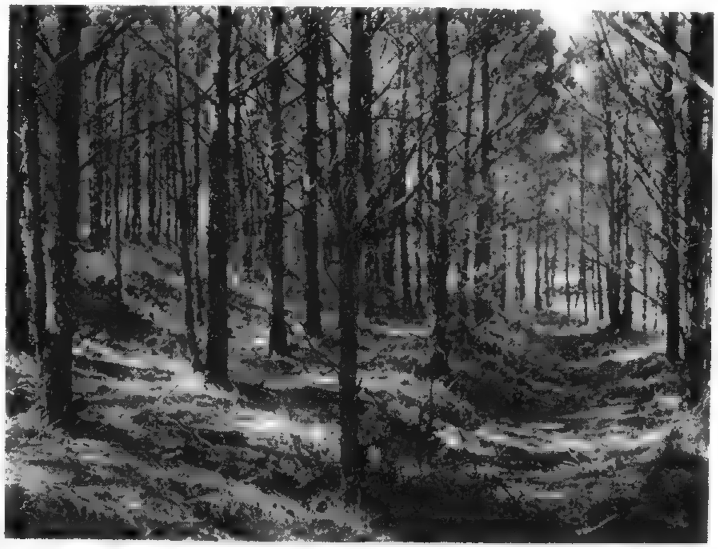

Figure 8.—**Ten-year-old stand of loblolly pine on Ruston fine sandy loam, eroded strongly sloping phase.**

Ruston fine sandy loam, severely eroded strongly sloping phase (RaE3).—The surface layer is a mixture of the original surface soil and the subsoil. Rills and gullies are visible. Runoff is much faster than for Ruston fine sandy loam, eroded very gently sloping phase.

Some areas have been cultivated, but this soil is now used for forest. Erosion is a serious hazard if the soil is cultivated. Capability unit 36 (VIe-1).

Ruston fine sandy loam, moderately steep phase (RaF).—The surface soil ranges from 6 to 12 inches in depth, and the solum, from 30 to 40 inches. Runoff is rapid.

Forest covers most of the area, and the soil is suited to this use. The steep slopes make erosion a serious problem

where a permanent plant cover is not provided. Capability unit 43 (VIIe–1).

Ruston fine sandy loam, eroded moderately steep phase (RaF2).—The surface layer is 4 to 6 inches thick in most places, but the subsoil is exposed in some places. Runoff is much faster than for Ruston fine sandy loam, eroded very gently sloping phase.

This soil is on steep slopes that break from smoother areas occupied by other Ruston soils. Erosion is a very serious hazard because the slopes are strong. The soil is used mainly for trees. Capability unit 43 (VIIe–1).

Ruston fine sandy loam, severely eroded moderately steep phase (RaF3).—The surface layer is a mixture of original surface soil and subsoil. Rills and gullies are visible. Runoff is rapid.

This soil is on steep slopes next to more nearly level areas of other Ruston soils. It is used for forest, and, since erosion is a very serious hazard, this is its best use. Capability unit 43 (VIIe–1).

Savannah and Franklinton soils

The Savannah and Franklinton soils are gently sloping to sloping, somewhat poorly drained to moderately well drained, and strongly acid. The surface soils range from a dark-gray to light brownish-gray fine sandy loam to silt loam. The subsoils are yellow to brownish-yellow silty clay loam to sandy clay loam. A thin mantle of loess over brittle sandy clays was the parent material of the Franklinton soils. The Savannah soils developed from unconsolidated beds of acid sands, sandy loams, and sandy clays. The native vegetation is pine, oak, hickory, sweetgum, blackgum, dogwood, and poplar.

These soils occur in such an intricate, irregular pattern that it is impractical to map them separately. They are very closely associated with the Ora and Dulac soils, which are moderately well drained to well drained. Most of the acreage is in the vicinity of Newton, Hickory, and Conehatta. These soils are suited to cultivation.

Savannah and Franklinton soils, eroded very gently sloping phases (SaB2).—The following profile descriptions were taken 4 miles northwest of Conehatta in a cultivated field.

Franklinton silt loam:

A_p 0 to 5 inches, grayish-brown (10YR 5/2) silt loam; weak fine granular structure; friable; strongly acid; 5 to 7 inches thick; abrupt smooth boundary.

A_2 5 to 7 inches, pale-brown (10YR 6/3) silt loam; weak fine granular structure; strongly acid; 1 to 3 inches thick; abrupt smooth boundary.

B_2 7 to 19 inches, yellowish-brown (10YR 5/6) silty clay loam with a few, fine, distinct, dark yellowish-brown (10YR 4/4) mottles; moderate medium subangular blocky structure; friable; strongly acid; 10 to 15 inches thick; abrupt wavy boundary.

B_{2m} 19 to 55 inches, dark yellowish-brown (10YR 4/4) fine sandy loam with many, medium, distinct, light-gray (10YR 7/2) mottles; strong medium subangular blocky structure; firm; strongly acid; 30 to 45 inches thick; clear wavy boundary.

D 55 to 75 inches, mottled yellowish-red (5YR 5/8) and yellow (10YR 7/6) fine sandy clay; moderate medium subangular blocky structure; friable.

Savannah fine sandy loam:

A_p 0 to 6 inches, light brownish-gray (10YR 6/2) fine sandy loam; weak fine granular structure; friable; strongly acid; 6 to 8 inches thick; clear smooth boundary.

B_1 6 to 8 inches, very pale brown (10YR 7/4) fine sandy clay loam; weak fine subangular blocky structure; friable; strongly acid; 2 to 4 inches thick; abrupt smooth boundary.

B_2 8 to 24 inches, yellowish-brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; strongly acid; 15 to 20 inches thick; clear wavy boundary.

B_{2m} 24 to 58 inches, mottled yellowish-brown (10YR 5/8), yellow (10YR 8/6), and dark yellowish-brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable; strongly acid; 30 to 50 inches thick; clear wavy boundary.

C 58 to 78 inches, yellowish-brown (10YR 5/6) sandy clay loam with gray (10YR 6/1) mottles; moderate medium subangular blocky structure; friable; strongly acid.

The thickness of the solum (depth to the C horizon) ranges from 40 to 60 inches. The silt loam to fine sandy loam surface layer is from 4 to 6 inches thick, but there are small areas where practically all the surface soil has been lost. Included with this soil are small areas of the better drained Ora and Dulac soils.

The soil is low in organic matter. The infiltration rate is medium, and the water-holding capacity is adequate. Internal movement of water is moderate above the pan and slow in that layer. The plow layer has good tilth, and the productivity of the soil is good.

Practically all of this soil has been cropped, much of the time to cotton and corn. Some of the acreage is now used for pasture. The slope, good tilth, and favorable moisture relations make this soil suitable for most crops, but erosion is a moderate hazard. Capability unit 7 (IIe–7).

Savannah and Franklinton soils, very gently sloping phases (SaB).—The 6- to 8-inch plow layer of these soils has a darker gray surface than that of Savannah and Franklinton soils, eroded very gently sloping phases. Most areas of these soils have slopes ranging from 2 to 3 percent, although they are associated with the more sloping areas of Savannah and Franklinton soils.

Cotton and corn are the principal crops. These soils are suited to row crops, small grains, and pasture when limed, fertilized, and properly seeded. Capability unit 7 (IIe–7).

Savannah and Franklinton soils, gently sloping phases (SaC).—The surface layer is 6 to 8 inches thick. Runoff is faster than for the Savannah and Franklinton soils, eroded very gently sloping phases.

Most of this soil has been used for cotton and corn. Some areas are still used for these crops, but the soil is better suited to sod crops and pine trees. The strong slopes require intensive conservation practices when this soil is cultivated. Capability unit 17 (IIIe–7).

Savannah and Franklinton soils, eroded gently sloping phases (SaC2).—Although the subsoil is exposed in some places, especially on stronger slopes, the surface soil is normally 4 to 6 inches deep. Runoff is faster than for Savannah and Franklinton soils, eroded very gently sloping phases.

Practically all of this soil has been cultivated, but the slopes make erosion a hazard, and cultivation requires intensive conservation practices. Most areas are in pasture and trees, to which they are suited. Capability unit 17 (IIIe–7).

Sawyer series

These level to sloping soils are somewhat poorly drained and acid throughout the profile. They developed from

thin beds of clays and sandy clay loams. They have a dark-gray fine sandy loam surface soil and a brownish-yellow sandy clay subsoil. These soils supported a native vegetation consisting chiefly of oak and pine and some gum and hickory.

Sawyer soils are located mainly in the southwestern part of the county adjacent to the prairie. The Mayhew, Eutaw, Vaiden, Shubuta, and Boswell are associated soils.

Sawyer fine sandy loam, very gently sloping phase (SbB).—The following describes a profile of this soil taken in a pasture 2 miles west of Roberts:

- A_p 0 to 7 inches, dark-gray (10YR 4/1) fine sandy loam; weak fine granular structure; friable; strongly acid; 4 to 8 inches thick; abrupt smooth boundary.
- A_2 7 to 10 inches, very pale brown (10YR 7/4) fine sandy clay loam; weak medium subangular blocky structure; friable; strongly acid; 2 to 4 inches thick; abrupt smooth boundary.
- B_2 10 to 20 inches, brownish-yellow (10YR 6/8) sandy clay with few, fine, faint, light-gray (10YR 7/2) mottles; moderate medium subangular blocky structure; firm; strongly acid; 10 to 20 inches thick; clear smooth boundary.
- B_3 20 to 26 inches, yellow (10YR 7/6) sandy clay with many, fine, distinct, yellowish-red (5YR 5/8) and light-gray (10YR 7/2) mottles; moderate medium subangular blocky structure; firm; strongly acid; 4 to 6 inches thick; clear smooth boundary.
- C 26 to 56 inches, mottled gray (10YR 6/1) and yellowish-red sandy clay loam; moderate medium subangular blocky structure; strongly acid.

The solum ranges from 25 to 30 inches in thickness. The surface layer (A_p and A_2) is 8 to 10 inches thick. Small areas of Mayhew, Eutaw, and Vaiden soils are included with this soil.

The soil is low in organic matter, although it has fairly good productivity. The infiltration rate is fair, but internal movement of water is slow. The available moisture capacity is moderate in the upper part of the profile and low in the lower horizons.

Although most of this soil has been cropped, it is now used chiefly for pasture. Its gentle slopes and favorable moisture relations make it suitable for cultivated crops. Liming, fertilizing, and proper seeding will help to produce good yields of crops or pasture. Capability unit 6 (IIe–6).

Sawyer fine sandy loam, eroded very gently sloping phase (SbB2).—Although small areas of subsoil are exposed, the surface layer is 4 to 6 inches deep in most places.

Much of this soil has been used for row crops, but most of the acreage is now in grass and trees. If it is properly limed, fertilized, and seeded, this soil will produce good pasture. Capability unit 6 (IIe–6).

Sawyer fine sandy loam, level phase (SbA).—This soil is on the level tops of ridges. Its surface layer is 8 to 10 inches deep. Surface runoff is slow; consequently, moisture is available to plants longer than on the eroded very gently sloping phase of Sawyer fine sandy loam.

Some of this soil has been cultivated, but most of it is now used for pasture and trees. Where it is properly fertilized and seeded, it is well suited to pasture. Capability unit 6 (IIe–6).

Sawyer fine sandy loam, eroded gently sloping phase (SbC2).—In most places the layers above the subsoil are 4 to 6 inches thick, but the subsoil is exposed on some of the stronger slopes. Runoff is faster than for Sawyer fine sandy loam, very gently sloping phase.

Most of the acreage has been cultivated but is now used for pasture and trees. The strong slopes make erosion a hazard. Intensive conservation practices are needed if the soil is cultivated. Probably this soil is best for pasture or trees. Capability unit 18 (IIIe–8).

Sawyer fine sandy loam, eroded sloping phase (SbD2).—In most places the top layers of the solum are 3 to 8 inches thick. The thickness depends on location, however, and in some areas the subsoil is exposed. Runoff is rapid because the soil is on strong slopes adjoining more nearly level areas.

Little of this soil has been cultivated. It is used chiefly for trees. If the soil is cropped, intensive conservation practices are needed to control erosion. Capability unit 29 (IVe–8).

Shubuta series

In the Shubuta series are strongly acid, moderately well drained soils that have a pale-brown fine sandy loam surface layer and a dark-brown sandy clay subsoil. Their parent material consisted mainly of thin, stratified beds having a clay and sandy clay loam texture. The soils are gently sloping to moderately steep. Gum, oak, hickory, and pine trees are native to these soils.

Although these soils occur throughout the county, most of their acreage is near Decatur. The associated Ruston and Ora soils contrast with the Shubuta soils in having a yellowish-red sandy clay loam subsoil. The Nacogdoches soils, also associated with the Shubuta soils, contrast in having a dark-red clay subsoil. The majority of the Shubuta soils have been cultivated.

Shubuta fine sandy loam, eroded very gently sloping phase (SdB2).—The following describes a profile taken 4 miles southeast of Decatur:

- A_p 0 to 6 inches, pale-brown (10YR 6/3) fine sandy loam; weak fine granular structure; very friable; strongly acid; 8 to 10 inches thick; abrupt smooth boundary.
- B_1 6 to 9 inches, brownish-yellow (10YR 6/6) sandy clay loam; weak fine to medium subangular blocky structure; friable; strongly acid; 3 to 6 inches thick; clear smooth boundary.
- B_2 9 to 28 inches, dark-brown (7.5YR 4/4) sandy clay; strong medium subangular blocky structure; friable to firm; strongly acid; 15 to 20 inches thick; clear smooth boundary.
- B_3 28 to 38 inches, red (2.5YR 5/6) fine sandy clay loam with many, medium, distinct, brownish-yellow (10YR 6/6) and gray (10YR 5/1) mottles; moderate medium subangular blocky structure; strongly acid; 10 to 15 inches thick; clear wavy boundary.
- C 38 to 50 inches, brownish-yellow (10YR 6/8) fine sandy clay loam with many, medium, distinct, red (2.5YR 4/8) and gray (10YR 6/1) mottles; moderate fine to medium subangular blocky structure; friable; strongly acid; several feet thick in most places.

Although the subsoil is exposed in some places, the surface layer is normally 6 to 8 inches thick. The depth of the solum is 40 to 50 inches. Included in this soil are small areas of Ruston, Ora, and Nacogdoches soils.

The content of organic matter is low, but productivity is fairly good. The rate of infiltration is fair. This soil has a slow internal movement of water. The capacity for holding water available to plants is moderate in the upper part of the profile but low in the lower horizons. The plow layer has good tilth.

Practically all of this soil has been cultivated to corn and cotton. These are still the chief crops, but some pasture is grown. Row crops, pasture, and trees are suitable for this soil. Capability unit 6 (IIe–6).

Shubuta fine sandy loam, very gently sloping phase (SdB).—The 4- to 5-inch plow layer is grayer than that of Shubuta fine sandy loam, eroded very gently sloping phase. The depth of the surface soil is 8 to 10 inches.

Little of this soil has been cultivated. It occurs on ridgetops in association with the more sloping Shubuta soils. Row crops, small grains, pasture, and trees grow well on this soil. It requires but limited conservation practices. Capability unit 6 (IIe–6).

Shubuta fine sandy loam, gently sloping phase (SdC).—This soil occurs on slopes near smoother areas of Shubuta soils. The depth of the surface layer is 6 to 10 inches. Runoff is much faster than for Shubuta fine sandy loam, eroded very gently sloping phase.

Little of this soil has been cultivated. Most of the acreage is in trees, since the slopes make intensive conservation practices necessary when the soil is cropped. The soil is suitable for pasture and row crops. Capability unit 18 (IIIe–8).

Shubuta fine sandy loam, eroded gently sloping phase (SdC2).—The surface layer is 4 to 5 inches deep. The subsoil is exposed in some places, especially where the slopes are strongest. This soil has a much faster runoff than Shubuta fine sandy loam, eroded very gently sloping phase.

Practically all this soil has been cultivated. A considerable part is still used for row crops and pasture, for which the soil is well suited. Since erosion is a decided hazard, cultivation will require intensive conservation practices. Capability unit 18 (IIIe–8).

Shubuta fine sandy loam, sloping phase (SdD).—The 20- to 30-inch depth of the solum includes 8 to 10 inches of surface soil. Runoff is more rapid than for Shubuta fine sandy loam, eroded very gently sloping phase.

This soil occurs on breaks from smoother areas of Shubuta soils and associated soils. If it is cultivated, the strong slopes require intensive conservation practices. The soil is used chiefly for trees. Capability unit 29 (IVe–8).

Shubuta fine sandy loam, eroded sloping phase (SdD2).—The depth of the surface soil is 3 to 6 inches. Runoff is rapid.

Practically all of this soil is in pasture and trees, although it was once cultivated. If cropped, the soil requires intensive conservation practices because of the serious erosion hazard. Capability unit 29 (IVe–8).

Shubuta fine sandy loam, strongly sloping phase (SdE).—Although the depth of the solum varies with the location on the slope, the surface layer is 6 to 10 inches thick in most places. Runoff is much faster than for Shubuta fine sandy loam, eroded very gently sloping phase.

This soil is in forest, and it is suited to this use. Capability unit 37 (VIe–2).

Shubuta fine sandy loam, eroded strongly sloping phase (SdE2).—The depth of the surface layer is 4 to 6 inches. The solum is 20 to 30 inches thick. Runoff is rapid.

This soil is on steep slopes near more nearly level areas of Shubuta soils and is suited to forest. It has been used for crops but is now in trees and pasture. Capability unit 37 (VIe–2).

Shubuta clay loam, severely eroded very gently sloping phase (ScB3).—A mixture of the original surface soil and subsoil makes up the plow layer. It ranges from a fine sandy loam to sandy clay. The tilth is not favorable, and the infiltration rate is slow. Response to fertilizer is better than for the Shubuta fine sandy loams because the plow layer is less subject to leaching.

All of this soil was once cultivated, but it is now wooded. Erosion is a decided hazard, and the soil requires moderate conservation practices where it is cultivated. It will support pasture under proper management. Capability unit 28 (IVe–7).

Shubuta clay loam, severely eroded gently sloping phase (ScC3).—The 4- to 5-inch plow layer is a reddish-brown fine sandy loam to sandy clay loam consisting of a mixture of the original surface soil and subsoil. Infiltration is slow. Runoff is rapid. The ability to hold moisture available to plants is low.

All of this soil has been cropped, but the erosion hazard requires intensive conservation practices where it is cultivated. This soil is not well suited to pasture. It is best suited to trees, and most of this acreage is now wooded. Capability unit 38 (A–3, VIe–3).

Shubuta clay loam, severely eroded sloping phase (ScD3).—The original surface soil and subsoil are mixed in the 3- to 4-inch plow layer. It ranges from reddish-brown fine sandy loam to sandy clay loam. Runoff is rapid.

Most of this soil has been cultivated, but it is now used mainly for trees. The slopes cause a serious erosion hazard. Capability unit 38 (A–3, VIe–3).

Shubuta clay loam, severely eroded strongly sloping phase (ScE3).—The surface layer contains a mixture of what was formerly surface soil and subsoil. It is a reddish-brown fine sandy loam to sandy clay loam. Runoff is much greater than for Shubuta fine sandy loam, eroded very gently sloping phase.

Since this soil occurs on steep slopes, it is planted to trees, for which it is suited. Capability unit 38 (A–3, VIe–3).

Shubuta and Cuthbert soils, moderately steep phases (SgF).—The Shubuta and Cuthbert soils are moderately well drained to well drained and moderately steep. The Shubuta developed from sandy clay and clay of the Coastal Plain, and the Cuthbert, from clay and sandy clay loam. Gum, oak, hickory, and pine trees are the native vegetation.

These soils occur in such an intricate pattern it is impractical to map them separately. They are too steep for crops and pasture.

Shubuta fine sandy loam:

A_p 0 to 6 inches, pale-brown (10YR 6/3) fine sandy loam; weak fine granular structure; very friable; strongly acid; 8 to 10 inches thick; abrupt smooth boundary.

B_1 6 to 9 inches, brownish-yellow (10YR 6/6) sandy clay loam; weak fine to medium subangular blocky structure; friable; strongly acid; 3 to 6 inches thick; clear smooth boundary.

B_2 9 to 28 inches, dark-brown (7.5YR 4/4) sandy clay; strong medium subangular blocky structure; friable to firm; strongly acid; 15 to 20 inches thick; clear smooth boundary.

B_3 28 to 38 inches, red (2.5YR 5/6) fine sandy clay loam with many, medium, distinct, brownish-yellow (10YR 6/6) and gray (10YR 5/1) mottles; moderate medium subangular blocky structure; strongly acid; 10 to 15 inches thick; clear wavy boundary.

C 38 to 50 inches, brownish-yellow (10YR 6/8) fine sandy clay loam with many, medium, distinct, red (2.5YR 4/8) and gray (10YR 6/1) mottles; moderate fine to medium subangular blocky structure; friable; strongly acid; usually several feet thick.

Cuthbert fine sandy loam:

- A_p 0 to 4 inches, grayish-brown (10YR 5/2) fine sandy loam; weak fine granular structure; friable; strongly acid; 2 to 5 inches thick; abrupt clear boundary.
- A_2 4 to 8 inches, light brownish-gray (10YR 6/2) fine sandy loam; fine granular structure; friable; strongly acid; 3 to 8 inches thick; clear smooth boundary.
- B_2 8 to 14 inches, yellowish-red (5YR 5/6) clay; strong medium to coarse subangular blocky structure; firm to very firm; strongly acid; clear smooth boundary.
- C 14 to 40 inches, mottled gray (10YR 6/1), yellow (10YR 7/6), and red (2.5YR 4/6) thinly bedded sands and clays; weak medium to coarse subangular blocky structure.

The surface soils range from fine sandy loam to clay loam. Capability unit 44 (VIIe–4).

Stough series

Soils of the Stough series are acid, level to very gently sloping, and somewhat poorly drained. They have a dark-gray very fine sandy loam surface layer. Fragipans occur at a depth of about 23 inches in the very pale brown sandy clay loam subsoil. The Stough soils have developed from old alluvium washed from Ruston, Ora, Savannah, and Shubuta soils. The native growth is predominantly hardwoods with some pines.

These soils, associated with the better drained Tilden and Prentiss soils, are located along Potterchitto Creek and north of Chunky. They can be cultivated.

Stough very fine sandy loam, level phase (ShA).—The following describes a profile of this soil taken in a cultivated field east of Perdue on the south side of State Highway No. 494:

- A_p 0 to 8 inches, dark-gray (10YR 4/1) very fine sandy loam; weak fine granular to subangular blocky structure; very friable; strongly acid; 8 to 10 inches thick; clear smooth boundary.
- B_1 8 to 11 inches, pale-brown (10YR 6/3) very fine sandy loam with many, fine, faint, yellow (10YR 7/6) mottles; weak fine subangular blocky structure; friable; strongly acid; 3 to 5 inches thick; clear smooth boundary.
- B_2 11 to 23 inches, very pale brown (10YR 7/3) sandy clay loam with many, fine, distinct, light-gray (10YR 7/1) and brownish-yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable; strongly acid; 12 to 15 inches thick; clear smooth boundary.
- B_{3m} 23 to 38 inches, light brownish-gray (10YR 6/2) fine sandy loam with many, fine, distinct, yellowish-brown (10YR 5/8) mottles; weak medium subangular blocky structure; friable; strongly acid; 15 to 30 inches thick; abrupt smooth boundary.
- C 38 to 58 inches, light-gray (10YR 7/1) sandy clay with yellow (10YR 7/6) mottles; moderate medium subangular blocky structure; firm.

The soil is 30 to 50 inches deep to the C horizon. In most places the surface layer ranges from 8 to 10 inches in thickness, but, in depressed areas where material has accumulated, this layer is thicker. Included with this soil are small areas of Prentiss soils, which are better drained, and of Myatt soils, which are more poorly drained.

The content of organic matter and the productivity are low. The infiltration rate is fairly slow. Internal movement of water is moderate above the pan but slow in the pan. The pan layer also limits the available moisture capacity. The plow layer has good tilth.

Most of this soil has been cropped. Some of the acreage has reverted to woods, but more is in pasture. Surface runoff and internal drainage are such that the soil is most suitable for pasture and pine trees. It will produce good pasture if properly limed, fertilized, and seeded. Capability unit 20 (IIIs–2).

Stough very fine sandy loam, very gently sloping phase (ShB).—The surface soil is lighter colored than that of Stough very fine sandy loam, level phase, and surface drainage is better. Most of this soil is on slopes of 2 to 3 percent that break from the level phase.

Most of this soil is in trees and pasture. It can be used for row crops and grains, but it is better for trees and pasture. Capability unit 20 (IIIs–2).

Sumter series

In the Sumter series are somewhat poorly drained, dominantly gently sloping soils that are alkaline throughout. They have a light olive-brown clay surface soil and a light yellowish-brown clay subsoil. They developed from Selma chalk.

Sumter soils are associated with the Binnsville, Vaiden, and Eutaw soils. They have a lighter colored surface layer than the Binnsville. They are alkaline, whereas the Vaiden and Eutaw soils are acid. One soil of the Sumter series was mapped in this county.

Sumter clay, eroded gently sloping phase (SkC2).—All of this soil is south of Lawrence in the southwestern corner of the county. The following describes a profile 2 miles south of Lawrence on State Highway No. 505:

- A_p 0 to 5 inches, light olive-brown (2.5Y 5/4) clay; moderate medium subangular blocky structure; friable to firm; alkaline; 8 to 10 inches thick; clear wavy boundary.
- B_2 5 to 11 inches, pale-yellow (2.5Y 7/4) to light yellowish-brown (2.5Y 6/4) calcareous clay; moderate medium subangular blocky structure; firm; alkaline; 5 to 10 inches thick; clear smooth boundary.
- C 11 to 48 inches, light-gray (2.5Y 7/2) calcareous Selma chalk with white (2.5Y 8/0) mottles; moderate medium subangular blocky structure; firm; alkaline.

The depth to the C horizon varies according to location, as does also the depth of the surface layer. In small patches all the original surface soil has been removed by severe erosion. Small areas of Binnsville soils are included with this soil.

This soil is low in organic matter and in natural fertility. It has a low infiltration rate, and the subsoil is slowly permeable. The available moisture capacity is moderate in the upper 11 inches of the profile but low below that depth.

Although some of this soil has been cropped, it is now used for pasture, to which it is suited. The pasture is fair if fertilized and seeded. Capability unit 12 (A–6, IIIe–1).

Tilden series

These level to sloping, strongly acid soils are moderately well drained. They have a grayish-brown surface soil, a brown to yellowish-red sandy clay loam subsoil, and a pan at a depth of about 24 inches. Their parent material was washed from Ruston, Ora, Savannah, Shubuta, and associated soils. Mixed hardwoods and pines are native to these soils.

Tilden soils occur in small areas on most of the stream terraces throughout the county. They are associated with Prentiss soils, which have about the same drainage, and with the better drained Cahaba soils. The Tilden subsoil is browner than the Prentiss subsoil.

Tilden very fine sandy loam, eroded very gently sloping phase (TaB2).—The following describes a profile of this soil taken east of Chunky Creek along United States Highway No. 80.

- A_p 0 to 6 inches, grayish-brown (10YR 5/2) very fine sandy loam; weak fine granular structure; strongly acid; 8 to 10 inches thick; abrupt smooth boundary.
- B_1 6 to 9 inches, brown (10YR 5/3) light sandy clay loam; weak medium subangular blocky structure; strongly acid; 3 to 5 inches thick; gradual wavy boundary.
- B_2 9 to 24 inches, yellowish-red (5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; strongly acid; 15 to 20 inches thick; abrupt wavy boundary.
- B_{3m} 24 to 53 inches, mottled strong-brown (7.5YR 5/8), very pale brown (10YR 7/4), and red (2.5YR 5/8) fine sandy loam; moderate medium subangular blocky structure; friable; strongly acid; 30 to 40 inches thick; gradual wavy boundary.
- C 53 to 84 inches, mottled strong-brown (7.5YR 5/8), very pale brown (10YR 8/4), and gray (10YR 6/1) fine sandy loam; weak medium subangular blocky structure; friable.

The depth to the C horizon is 40 to 60 inches. In most places the surface layer ranges from 8 to 10 inches in thickness, but there are small, severely eroded areas where it is less than 8 inches thick. Included with this soil are small areas of Prentiss soils.

The supply of organic matter is low, but productivity is good. The infiltration rate is fair, and internal movement of water is good above the pan and slow in that layer. The available water capacity is moderate above the pan but low in that layer. The plow layer has good tilth.

Practically all of this soil is cultivated, chiefly for cotton and corn. Some of the acreage is used for pasture. Gentle slopes, good tilth, and favorable moisture make this soil suitable for cultivation, but erosion is a moderate hazard. Crops and pastures need lime and fertilizer, and pastures should be properly seeded. Capability unit 7 (IIe–7).

Tilden very fine sandy loam, very gently sloping phase (TaB).—The plow layer of this soil is darker and 2 or 3 inches thicker than that of Tilden very fine sandy loam, eroded very gently sloping phase.

Most of this soil is cropped to cotton and corn. Some of it is used for pasture. It is well suited to all row crops, small grains, and pasture if it is limed, fertilized, and properly seeded. Pine trees thrive. Capability unit 7 (IIe–7).

Tilden very fine sandy loam, level phase (TaA).—The surface soil is lighter gray than that of Tilden very fine sandy loam, eroded very gently sloping phase. Surface runoff is slow, and excess water leaves the soil slowly.

This soil is on ridgetops with the more sloping Tilden soils. Much of it has been cultivated and some has been pastured. It is suitable for most row crops, but small grains and pasture do better. The slow runoff delays work in the fields and is unfavorable to some crops during the wetter parts of the growing season. The moisture is favorable for pasture. Capability unit 8 (IIs–1).

Tilden very fine sandy loam, gently sloping phase (TaC).—The surface layer is 6 to 10 inches thick; the depth varies according to location. The surface layer is lighter colored than that of Tilden very fine sandy loam, eroded very gently sloping phase. Runoff is rapid.

This soil is on slopes near smoother areas of Prentiss and Stough soils and other Tilden soils. It is used chiefly for pasture and trees, for which it is suited. Not much of it is cultivated. If it is cultivated, intensive conservation practices are required. Capability unit 17 (IIIe–7).

Tilden very fine sandy loam, eroded gently sloping phase (TaC2).—Although the surface layer normally is 4 to 6 inches deep, the subsoil is exposed on some of the stronger slopes. Runoff is much faster than for Tilden very fine sandy loam, eroded very gently sloping phase.

Most of this soil has been cultivated at some time because it is near less sloping areas of Prentiss and Stough soils and of other Tilden soils. Its slopes are strong, however, and intensive conservation practices are required to control erosion. Most of this soil is now used for pasture and pine trees, to which it is suited. Capability unit 17 (IIIe–7).

Tilden very fine sandy loam, eroded sloping phase (TaD2).—The depth of the surface layer varies with location, but the normal range is 4 to 6 inches. The subsoil is exposed in places, and there are small rills and gullies. Runoff is much faster than for Tilden very fine sandy loam, eroded very gently sloping phase.

This soil is on slopes that break sharply from smoother areas of Prentiss soils and from other Tilden soils. Little of the acreage has been cultivated, and very intensive conservation practices are required where it is cultivated. Most of this soil is in pasture or trees. Capability unit 29 (IVe–8).

Una series

In the Una series are soils that are level, poorly drained, and acid throughout. The soils have a dark-gray to light brownish-gray clay surface soil that grades to a light-gray mottled clay at a depth of about 8 inches. Clayey alluvium of the Coastal Plain was their parent material. Oak, elm, ash, and hickory are the native vegetation.

The Una soils are associated with Houlka soils but are not so well drained. One soil of the Una series was mapped in the county.

Una clay, local alluvium phase (Ua).—This soil occurs in small drains in the southwestern corner of the county. The following describes a profile taken in an idle field 4 miles southwest of Lawrence:

- 0 to 8 inches, dark-gray (10YR 4/1) clay; moderate medium subangular blocky structure; firm; medium acid; 8 to 10 inches thick; abrupt wavy boundary.
- 8 to 24 inches, light-gray (10YR 7/2) clay with many, distinct, medium, dark-red (2.5YR 3/6) and yellow (10YR 7/6) mottles; firm; medium acid; 10 to 20 inches thick; clear wavy boundary.
- 24 to 50 inches, mottled gray (10YR 5/1), yellow (10YR 7/6), and brown (7.5YR 5/4) clay; firm; medium acid.

The depth to mottling varies according to location. This soil is low in organic matter and in natural fertility. Both the infiltration rate and the internal movement of water are slow. The moisture-holding capacity is moderate.

This soil is not suitable for row crops; it is poorly drained and is used chiefly for pasture. Pastures need V- type and W-type ditches to remove surface water, and they should be limed, fertilized, and properly seeded. Capability unit 34 (IVw–1).

Vaiden-Eutaw soils

Vaiden-Eutaw soils are somewhat poorly drained to poorly drained and level to sloping. They developed from thin, stratified beds of sand and sandy clay, which, at a depth of 48 inches or less, overlie calcareous forma-

tions. The native vegetation is predominantly oak, gum, and other hardwoods and some pine.

These soils, though they are of two series, have been mapped together in this county because they occur in such an intricate pattern. They are associated with the Binnsville and Sumter soils, which have about the same drainage but are alkaline. Limited cultivation can be practiced on Vaiden-Eutaw soils.

Vaiden-Eutaw clays, very gently sloping phases (VaB).—The following describes profiles taken in a pasture along a local road 5 miles southwest of Lawrence:

Vaiden clay:

- A_p 0 to 4 inches, gray (10YR 5/1) clay; moderate medium subangular blocky structure; medium acid; 4 to 6 inches thick; abrupt smooth boundary.
- B_1 4 to 6 inches, grayish-brown (10YR 5/2) clay; moderate medium subangular blocky structure; plastic when wet, very hard when dry, and firm when moist; medium acid; 2 to 4 inches thick; clear wavy boundary.
- B_2 6 to 19 inches, pale-yellow (2.5Y 8/4) clay with many, fine, faint, yellowish-red (5YR 5/6) and gray (10YR 6/1) mottles; moderate medium blocky structure; plastic when wet, very hard when dry, and firm when moist; medium acid; 12 to 15 inches thick; gradual wavy boundary.
- B_3 19 to 43 inches, light-gray (10YR 7/2) clay with many, fine, faint, brownish-yellow (10YR 6/6) mottles; moderate medium blocky structure; plastic when wet, hard when dry, and firm when moist; medium acid; 20 to 30 inches thick; gradual wavy boundary.
- D 47 to 60 inches, light-gray (10YR 7/2) calcareous clay and partially weathered chalk with many, medium, distinct, brownish-yellow (10YR 6/6) mottles; moderate medium blocky structure; firm; alkaline.

Eutaw clay:

- A_p 0 to 4 inches, dark-gray (10YR 4/1) clay; moderate medium subangular blocky structure; firm; medium acid; 4 to 6 inches thick; abrupt wavy boundary.
- B_1 4 to 7 inches, gray (10YR 6/1) clay with a few, fine, distinct, dark grayish-brown (10YR 4/2) mottles; moderate medium subangular blocky structure; firm; medium acid; 3 to 6 inches thick; abrupt wavy boundary.
- B_2 7 to 44 inches, gray (10YR 6/1) clay with many, fine, distinct mottles; moderate medium blocky structure; firm; medium acid; 30 to 40 inches thick; abrupt wavy boundary.
- D 44 to 60 inches, white (10YR 8/2) calcareous clay and partially weathered chalk with many, fine, distinct, yellow (10YR 8/6) mottles; moderate medium subangular blocky structure; firm; alkaline.

The thickness of these soils, or their depth to the D layer, varies with the location. The surface layer ranges from 4 to 6 inches in depth.

These soils are low in organic matter and in natural fertility. Their infiltration rate is slow, and permeability of their subsoil is slow. The amount of moisture held available for plants is limited.

Most of the acreage has been cropped, but much is now in pasture and trees. Pasture is best for these soils, as they require intensive conservation practices if cultivated. Capability unit 32 (IVs–2).

Vaiden-Eutaw clays, eroded gently sloping phases (VaC2).—The surface layer is normally 3 to 6 inches deep, but the subsoil is exposed in some places. Runoff is faster than for the very gently sloping phases of Vaiden-Eutaw clays.

Most of the acreage is on slopes above areas of Vaiden-Eutaw clays, very gently sloping phases; the soils have been cropped but are now used for pasture or trees. Erosion is a hazard that requires intensive conservation practices if the soils are cultivated. Capability unit 39 (A–6, VIe–3).

Vaiden-Eutaw clays, eroded sloping phases (VaD2).—These soils have a plow layer 3 to 6 inches thick. Runoff is much faster than for the very gently sloping phases of Vaiden-Eutaw clays.

Most of the acreage is on slopes that break sharply from smoother areas of Vaiden-Eutaw soils. Although some of the acreage has been cultivated, the soils are now used for trees and pasture, to which they are suited. Capability unit 39 (A–6, VIe–3).

Use and Management of the Soils

This section has three parts. The first defines the system the Soil Conservation Service uses to classify soils according to their capability. The second describes the capability units, or groups of soils that need similar management, and provides a table of suggested management practices. In the third part, estimated yields of principal crops are given for the soils of the county at two levels of management.

Capability Grouping

Capability grouping is a system of classification used to show the relative suitability of soils for crops, grazing, forestry, and wildlife. It is a practical grouping based on the needs and limitations of the soils, the risks of damage to them, and also their response to management. There are three levels above the soil mapping unit in this grouping. They are the capability unit, subclass, and class.

The capability unit, which can also be called a management group of soils, is the lowest level of capability grouping. A capability unit is made up of soils similar in kind of management they need, in risk of damage, and in general suitability for use.

The next broader grouping, the subclass, is used to indicate the dominant kind of limitation. The letter symbol "e" indicates that the main limiting factor is risk of erosion if the plant cover is not maintained; "w" means excess water that retards plant growth or interferes with cultivation; and "s" shows that the soils are shallow, droughty, or usually low in fertility. In some parts of the country there is another subclass, "c", for the soils that are limited chiefly by a climate that is too cold or too dry.

The broadest grouping, the land capability class, is identified by Roman numerals. All the soils in one class have limitations and management problems of about the same degree, but of different kinds, as shown by the subclass. All the land classes except class I may have one or more subclasses.

In classes I, II, and III are soils that are suitable for annual or periodic cultivation of annual or short-lived crops.

Class I soils are those that have the widest range of use and the least risk of damage. They are level, or nearly level, productive, well drained, and easy to work. They can be cultivated with almost no risk of erosion and will remain productive if managed with normal care.

Class II soils can be cultivated regularly, but they do not have quite so wide a range of suitability as class I soils. Some class II soils are gently sloping; consequently, they need moderate care to prevent erosion. Other soils in

class II may be slightly droughty or slightly wet, or somewhat limited in depth.

Class III soils can be cropped regularly but have a narrower range of use. These need even more careful management.

In class IV are soils that have greater natural limitations than those in class III, but they can be cultivated for some crops under very careful management.

In classes V, VI, and VII are soils that normally should not be cultivated for annual or short-lived crops, but they can be used for pasture or range, for woodland, or for wildlife.

Class V soils are nearly level and gently sloping but are droughty, wet, low in fertility, or otherwise unsuitable for cultivation.

Class VI soils are not suitable for crops because they are steep or droughty or otherwise limited, but they give fair yields of forage or forest products. Some soils in class VI can, without damage, be cultivated enough so that fruit trees or forest trees can be set out or pasture crops seeded.

Class VII soils provide only poor to fair yields of forage or forest products and have characteristics that limit them severely for these uses.

In class VIII are soils that have practically no agricultural use. Some of them have value as watersheds, as wildlife habitats, or for scenery.

The soils of Newton County have been placed in the following capability classes, subclasses, and units:

Class I. Deep, nearly level, productive soils; suitable for tilled crops and other uses; few or no permanent limitations.

- Unit 1 (I–1): Level, deep, well-drained, very fine sandy loam soil on upland ridgetops.

Class II.—Soils that have moderate limitations if tilled; suitable for crops, pasture, and trees.

- Subclass IIe.—Gently sloping soils subject to erosion if cover is not maintained.
  - Unit 2 (IIe–1): Very gently sloping well-drained soils on uplands.
  - Unit 3 (IIe–2): Severely eroded very gently sloping well-drained soil on uplands.
  - Unit 4 (IIe–3): Slightly to moderately eroded very gently sloping well-drained upland soil with clay to sandy clay subsoil.
  - Unit 5 (IIe–4): Severely eroded very gently sloping well-drained soil with clay to sandy clay subsoil.
  - Unit 6 (IIe–6): Very gently sloping somewhat poorly drained to moderately well drained soils on uplands.
  - Unit 7 (IIe–7): Very gently sloping mostly moderately well drained soils with fragipans.
- Subclass IIs.—Soils somewhat limited by their moisture capacity.
  - Unit 8 (IIs–1): Level moderately well drained soils with fragipans, on terraces.
- Subclass IIw.—Moderately wet soils.
  - Unit 9 (A–3, IIw–1): Nearly level moderately well drained to well drained soils on bottom lands.
  - Unit 10 (A–6, IIw–1): Nearly level moderately well drained clayey soil on bottoms of the Blacklands (Prairie).

Class III.—Soils that have severe limitations and require careful management if tilled; suitable for crops, pasture, and trees.

- Subclass IIIe.—Sloping soils that have high risk of erosion when tilled.
  - Unit 11 (A–3, IIIe–1): Gently sloping well-drained soils on uplands.
  - Unit 12 (A–6, IIIe–1): Gently sloping somewhat poorly drained clayey soil on uplands of the Blacklands (Prairie).
  - Unit 13 (IIIe–2): Severely eroded gently sloping well-drained soil on uplands.
  - Unit 14 (IIIe–3): Slightly to moderately eroded gently sloping well-drained soil with clay to sandy clay subsoil.
  - Unit 15 (IIIe–4): Severely eroded gently sloping well-drained upland soil with clay to sandy clay subsoil.
  - Unit 16 (IIIe–6): Very gently sloping to gently sloping moderately well drained soils on uplands.
  - Unit 17 (IIIe–7): Gently sloping mostly moderately well drained soils with fragipans.
  - Unit 18 (IIIe–8): Gently sloping somewhat poorly drained to moderately well drained soils on uplands.
- Subclass IIIs.—Droughty soils and poorly drained soils with fragipans.
  - Unit 19 (IIIs–1): Nearly level to gently sloping droughty soils on uplands.
  - Unit 20 (IIIs–2): Soils with fragipans, on terraces; moderately low fertility and capacity for available moisture.
- Subclass IIIw.—Soils that require artificial drainage if they are tilled.
  - Unit 21 (A–3, IIIw–1): Nearly level somewhat poorly drained soils on flood plains that are subject to overflow.
  - Unit 22 (A–6, IIIw-1): Nearly level "cold-natured" clayey soil on Blacklands (Prairie) bottoms that are subject to overflow.
  - Unit 23 (IIIw–2): Nearly level poorly drained soil high in organic matter and subject to overflow.

Class IV.—Soils that are suited to pasture or trees but, if tilled, are suitable for only limited or occasional cultivation and with severe limitations.

- Subclass IVe.—Soils severely limited by risk of erosion if cover is not maintained.
  - Unit 24 (IVe–1): Slightly or moderately eroded sloping well-drained soils on uplands.
  - Unit 25 (IVe–2): Severely eroded sloping well-drained soil on uplands.
  - Unit 26 (IVe–3): Slightly to moderately eroded sloping well-drained soil with clay to sandy clay subsoil.
  - Unit 27 (IVe–4): Severely eroded sloping well-drained upland soil with clay to sandy clay subsoil.
  - Unit 28 (IVe–7): Severely eroded very gently sloping moderately well drained soil on uplands.
  - Unit 29 (IVe–8): Slightly to moderately eroded sloping soils with either fragipans or clayey layers.

Unit 30 (IVe–9): Moderately shallow very gently sloping to gently sloping soils on uplands.

Subclass IVs.—Soils limited by moisture-holding capacity and poor tilth.

Unit 31 (IVs–1): Poorly drained "cold-natured" soils on bottoms subject to overflow.

Unit 32 (IVs–2): Poorly drained to somewhat poorly drained clays on Blackland (Prairie) uplands.

Unit 33 (IVs–4): Nearly level poorly drained fine sandy clay loam soil with sandy clay subsoil.

Subclass IVw.—Soils limited by overflow.

Unit 34 (IVw–1): Level poorly drained clay soil on Blackland (Prairie) bottoms subject to overflow.

Class V.—Soils not suited to tilled crops; few limitations for other uses.

Subclass Vs.—Infertile soil not suited to crops.

Unit 35 (Vs–1): Nearly level, sandy, infertile, somewhat wet soil on terraces.

Class VI.—Soils suited to pasture or trees, with moderate limitations, but not suited to tilled crops.

Subclass VIe.—Soils moderately limited for pasture or trees because of risk of erosion if cover is not maintained.

Unit 36 (VIe–1): Slightly to severely eroded strongly sloping well-drained upland soils.

Unit 37 (VIe–2): Slightly to moderately eroded strongly sloping moderately well drained upland soils.

Unit 38 (A–3, VIe–3): Severely eroded gently sloping to strongly sloping moderately well drained soils on uplands.

Unit 39 (A–6, VIe–3): Moderately to severely eroded very gently sloping to sloping poorly drained to somewhat poorly drained soils of the Blackland (Prairie) uplands.

Unit 40 (VIe–5): Slightly to moderately eroded gently sloping to moderately steep soils on uplands.

Unit 41 (VIe–7): Severely eroded gently sloping to sloping moderately well drained upland soils with red clay subsoils.

Subclass VIs.—Soils moderately limited for pasture or trees because of droughtiness and strong slopes.

Unit 42 (VIs–1): Strongly sloping droughty soil on uplands.

Class VII.—Soils severely limited for pasture or trees.

Subclass VIIe.—Soils limited by risk of erosion if cover is not maintained.

Unit 43 (VIIe–1): Moderately steep well-drained soils on uplands.

Unit 44 (VIIe–4): Moderately steep moderately well drained upland soils with surface soils variable in texture and thickness.

Management of Capability Units

The soils of Newton County have been placed in 44 capability units, each of which is discussed in the following pages. Table 3 provides a summary of suggested management practices for the 44 capability units.

All the soils in one unit need about the same kind of management, respond to management in about the same way, and have essentially the same limitations. The crop rotations mentioned in table 3 are given as examples. They are not the only rotations suitable for the soils.

CAPABILITY UNIT 1 (I-1)

Level, deep, well-drained, very fine sandy loam soil on upland ridgetops:

The one soil of this capability unit, Cahaba very fine sandy loam, level phase, has a very friable very fine sandy loam surface layer 10 to 12 inches thick. The subsoil is a moderately rapidly permeable yellowish-red sandy clay loam.

Slopes range from 0 to 2 percent. Moisture relations are favorable. Surface runoff is no hazard, and the capacity for holding available moisture is moderate to high. The supply of organic matter and the fertility are low. The reaction is medium acid to strongly acid. This soil is very responsive to fertilization, is easily tilled, and is suitable for many kinds of crops (see table 3). Most of the acreage is in cultivation.

CAPABILITY UNIT 2 (IIe-1)

Very gently sloping well-drained soils on uplands:

Cahaba very fine sandy loam, eroded very gently sloping phase.
Ruston fine sandy loam, eroded very gently sloping phase.
Ruston fine sandy loam, very gently sloping phase.

The surface soils are very friable very fine sandy loams or fine sandy loams. The subsoils are moderately rapidly permeable yellowish-red sandy clay loams.

Slopes range from 2 to 5 percent. Moisture relations are favorable. Surface runoff is not difficult to control, and the capacity for holding available moisture is moderate. Most of the acreage has been only slightly or moderately eroded, but a few small areas have lost most of their surface soil. The supply of organic matter and the fertility are low. The soils are strongly acid. They are very responsive to fertilization, are easily tilled, and are suitable for many kinds of crops (see table 3).

CAPABILITY UNIT 3 (IIe-2)

Severely eroded very gently sloping well-drained soil on uplands:

The one soil of this capability unit is Ruston fine sandy loam, severely eroded very gently sloping phase. Its plow layer, a mixture of the original surface soil and subsoil, is a brown to yellowish-red fine sandy loam to sandy loam. The subsoil is a moderately rapidly permeable yellowish-red sandy clay loam.

Slopes range from 2 to 5 percent. Surface runoff has not been controlled in the past, but the volume of runoff can be controlled under good management. The capacity of the soil to hold available moisture is moderate. Infiltration is slower than for the soils of capability unit 2 (IIe–1), and the tilth is poorer. The supply of organic matter and the fertility are low. The soil is strongly acid.

This soil is better for sod crops but is fairly well suited to a wide range of clean-tilled crops (see table 3).

CAPABILITY UNIT 4 (IIe-3)

Slightly to moderately eroded very gently sloping well-drained upland soil with clay to sandy clay subsoil:

The one soil of this capability unit is Nacogdoches loam, eroded very gently sloping phase. Its surface soil is an

easily tilled, friable loam, normally 4 to 8 inches thick. The subsoil is a moderately slowly permeable dark-red clay to sandy clay.

Slopes range from 2 to 5 percent. The volume of surface runoff can be controlled by good management. The capacity for holding available moisture is moderate. The soil is medium acid to strongly acid and low in organic matter. It is more fertile than most of the other soils in the county. Many kinds of crops and grasses can be grown (see table 3).

CAPABILITY UNIT 5 (IIe-4)

Severely eroded very gently sloping well-drained soil with clay to sandy clay subsoil:

The one soil in this capability unit is Nacogdoches sandy clay loam, severely eroded very gently sloping phase. The 4- to 5-inch plow layer, a mixture of the original surface soil and subsoil, is a sandy clay loam. The subsoil is a moderately slowly permeable dark-red clay to sandy clay.

This soil of the uplands is very susceptible to erosion. Slopes range from 2 to 5 percent. The volume of surface runoff can be controlled under good management. The capacity for holding moisture available for plants is moderate. The soil is medium acid to strongly acid, low in organic matter, and moderate in fertility. It is more fertile than most other soils of the county and is well suited to many kinds of crops and grasses (see table 3).

CAPABILITY UNIT 6 (IIe-6)

Very gently sloping somewhat poorly drained to moderately well drained soils on uplands:

Sawyer fine sandy loam, level phase.
Sawyer fine sandy loam, very gently sloping phase.
Sawyer fine sandy loam, eroded very gently sloping phase.
Shubuta fine sandy loam, very gently sloping phase.
Shubuta fine sandy loam, eroded very gently sloping phase.

These soils have very friable, easily tilled fine sandy loam surface soils that are 4 to 10 inches thick. The subsoils are moderately slowly to slowly permeable brownish-yellow to dark-brown sandy clays.

Except for Sawyer fine sandy loam, level phase, the soils have slopes ranging from 2 to 5 percent. Surface runoff can be controlled under good soil management. The capacity for holding available moisture is moderate in the upper part of the soils but low in the lower part. For most of the acreage, erosion has been slight to moderate, but in a few small areas most of the surface soil has been washed away. The supply of organic matter and the fertility are low. The soils are strongly acid. Many kinds of crops and pasture grasses can be grown on them (see table 3).

CAPABILITY UNIT 7 (IIe-7)

Very gently sloping mostly moderately well drained soils with fragipans:

Ora and Dulac soils, very gently sloping phases.
Ora and Dulac soils, eroded very gently sloping phases.
Prentiss very fine sandy loam, very gently sloping phase.
Prentiss very fine sandy loam, eroded very gently sloping phase.
Savannah and Franklinton soils, very gently sloping phases.
Savannah and Franklinton soils, eroded very gently sloping phases.
Tilden very fine sandy loam, very gently sloping phase.
Tilden very fine sandy loam, eroded very gently sloping phase.

These soils have very fine sandy loam to silt loam surface soils. Their subsoils are moderately permeable sandy clay loams to silty clay loams, which overlie thick, slowly permeable fragipans at a depth of about 24 inches. These soils are on uplands or terraces and have slopes of 2 to 5 percent. Runoff can be controlled with good management.

Erosion is slight to moderate for most of the acreage, but the surface soil has been washed away in a few small areas. The soils have good capacity for holding available moisture above the pan, but the capacity is low in that layer. The supply of organic matter and the fertility are low. The soils are medium acid to strongly acid. They are suited to many kinds of cultivated crops and to grasses (see table 3).

CAPABILITY UNIT 8 (IIs-1)

Level moderately well drained soils with fragipans, on terraces:

Prentiss very fine sandy loam, level phase.
Tilden very fine sandy loam, level phase.

The very fine sandy loam surface soils are very friable and easily tilled. The moderately permeable sandy clay loam subsoils overlie thick, slowly permeable fragipans at a depth of about 24 inches.

Slopes range from 0 to 2 percent, and surface runoff is no hazard. The capacity for holding available moisture is moderate above the pan but low in that layer. The supply of organic matter and the fertility are low. The soils are medium acid to strongly acid. They are suitable for many kinds of crops (see table 3).

CAPABILITY UNIT 9 (A-3, IIw-1)

Nearly level moderately well drained to well drained soils on bottom lands:

Iuka fine sandy loam.
Iuka very fine sandy loam, local alluvium phase.
Ochlockonee fine sandy loam, local alluvium phase.

These soils are deep, friable, and permeable. Slopes range from 0 to 2 percent, and moisture relations are favorable. The capacity for holding available moisture is moderate to high. The soils, however, are sometimes reached by overflows. The supply of organic matter is low, fertility is medium to low, and the reaction is strongly acid. These soils respond to fertilizer, are easily tilled, and are suitable for many kinds of crops (see table 3).

CAPABILITY UNIT 10 (A-6, IIw-1)

Nearly level moderately well drained clayey soil on bottoms of the Blacklands (Prairie):

The one soil of this capability unit, Catalpa clay, local alluvium phase, has a clay surface soil and subsoil. It is on slopes of 0 to 2 percent and is reached by overflows. The soil is slowly to very slowly permeable. Its capacity for holding available moisture is moderate. The natural fertility is fairly high, the supply of organic matter is moderate, and the reaction is alkaline. The soil shrinks and cracks when it dries, and wetness late in spring makes tillage fairly difficult. The soil is used mostly for pasture, to which it is well suited, but it is also fairly well suited to row crops that tolerate wetness (see table 3).

TABLE 3.—*Soils of Newton County arranged by capability*

Capability unit and soils	Suitable crops [1]	Suggested cropping systems
Unit 1 (I–1) Cahaba very fine sandy loam, level phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, truck crops, orchard crops, vetch, winter peas, sericea lespedeza, alfalfa, lupine, crotalaria, Alyce clover, and other grasses and legumes.	Annual row crops followed by cover crops, and management of crop residues. Close-growing crops one-third of the time and row crops two-thirds of the time. Sod half the time and row crops half the time.
Unit 2 (IIe–1) Cahaba very fine sandy loam, eroded very gently sloping phase. Ruston fine sandy loam, eroded very gently sloping phase. Ruston fine sandy loam, very gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, truck crops, orchard crops, vetch, winter peas, sericea lespedeza, alfalfa, lupine, crotalaria, Alyce clover, and other grasses and legumes.	Close-growing crops for half the time and row crops, followed by cover crops, for half the time. Sod or sericea lespedeza for 4 years and row crops, followed by cover crops, for 2 years.
Unit 3 (IIe–2) Ruston fine sandy loam, severely eroded very gently sloping phase.	Cotton, corn, soybeans, small grains, sorghum, millet, truck crops, orchard crops, peanuts, kudzu, vetch, winter peas, annual and sericea lespedezas, and other legumes.	Close-growing crops half the time and row crops, followed by cover crops, half the time. Sericea lespedeza or sod for 4 years and row crops, followed by cover crops, for 2 years. Sericea lespedeza or sod for 6 years and row crops, followed by cover crops, for 2 years.
Unit 4 (IIe–3) Nacogdoches loam, eroded very gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, orchard crops, vetch, winter peas, sericea lespedeza, and other grasses and legumes.	Sericea lespedeza or sod half the time and row crops half the time. Sod for 4 years and row crops, followed by cover crops, for 2 years.
Unit 5 (IIe 4) Nacogdoches sandy clay loam, severely eroded very gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, truck crops, orchard crops, vetch, kudzu, winter peas, sericea lespedeza, and other grasses and legumes.	Sericea lespedeza or sod half the time and row crops, followed by cover crops, half the time. Sericea lespedeza for 4 years and row crops, followed by cover crops, for 2 years. Sod for 6 years and row crops, followed by cover crops, for 2 years.
Unit 6 (IIe–6) Sawyer fine sandy loam, level phase. Sawyer fine sandy loam, very gently sloping phase. Sawyer fine sandy loam, eroded very gently sloping phase. Shubuta fine sandy loam, very gently sloping phase. Shubuta fine sandy loam, eroded very gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, vetch, winter peas, annual and sericea lespedezas, and other grasses and legumes.	Close-growing crops half the time and row crops, followed by cover crops, half the time. Sericea lespedeza or sod for 4 years and row crops, followed by cover crops, for 2 years.
Unit 7 (IIe–7) Ora and Dulac soils, very gently sloping phases. Ora and Dulac soils, eroded very gently sloping phases. Prentiss very fine sandy loam, very gently sloping phase. Prentiss very fine sandy loam, eroded very gently sloping phase. Savannah and Franklinton soils, very gently sloping phases. Savannah and Franklinton soils, eroded very gently sloping phases. Tilden very fine sandy loam, very gently sloping phase. Tilden very fine sandy loam, eroded very gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, vetch, winter peas, annual and sericea lespedezas, and other grasses and legumes.	Close-growing crops half the time and row crops, followed by cover crops, half the time. Sericea lespedeza or sod for 4 years and row crops, followed by cover crops, for 2 years.
Unit 8 (IIs–1) Prentiss very fine sandy loam, level phase. Tilden very fine sandy loam, level phase.	Cotton, corn, small grains, millet, sorghum, sudangrass, truck crops, vetch, winter peas, annual lespedeza, and other legumes and grasses.	Annual row crops, followed by cover crops, and good management of crop residues. Close-growing crops one-third of the time; row crops, followed by cover crops, two-thirds of the time; and good management of crop residues. Sod for half the time and row crops, followed by cover crops, for half the time.

units and suggestions for management of each unit

Fertilizer requirements	Tillage requirements	Supplementary practices for water control	Suitability for trees
Moderate to moderately high for all plant nutrients, lime, and organic matter.	Good tilth easily maintained; cultivation possible within a wide range of moisture content.	Arrange rows to remove excess surface water; use diversion terraces where water from hillsides is a problem.	Pine trees are well suited.
Moderate to moderately high for all plant nutrients, lime, and organic matter.	Not exacting	Needs vegetated outlets, terraces, and crop rows on the contour; diversion terraces needed where water from hillsides is a problem.	Pine trees are well suited.
Moderate to moderately high for all plant nutrients, lime, and organic matter; boron needed for alfalfa.	Avoid tillage, especially of more eroded parts, when soil is wet.	Needs vegetated outlets, terraces, and crop rows on the contour; diversion terraces needed where water from hillsides is a problem.	Pine trees are well suited.
Moderate to moderately high for all plant nutrients, lime, and organic matter.	Avoid tillage when soil is wet	Needs vegetated outlets, terraces, and crop rows on the contour; diversion terraces needed where water from hillsides is a problem.	Pine trees are well suited.
Moderate to moderately high for all plant nutrients, lime, and organic matter.	Avoid tillage when soil is wet	Needs vegetated outlets, terraces, and crop rows on the contour; diversion terraces needed where water from hillsides is a problem.	Pine trees are well suited.
High for all plant nutrients, lime and organic matter.	Avoid tillage when soils are wet	Needs vegetated outlets, terraces, and crop rows on the contour; diversion terraces needed where water from hillsides is a problem.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Good tilth fairly easy to maintain; cultivation possible within a fairly wide range of moisture content.	Needs vegetated outlets, terraces, and crop rows on the contour; diversion terraces needed where water from hillsides is a problem.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Avoid tillage when soils are wet	Arrangement of crop rows and W-ditches are needed for removal of surface water; diversion terraces needed where water from hillsides is a problem.	Pine trees are well suited.

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TABLE 3.—*Soils of Newton County arranged by capability*

Capability unit and soils	Suitable crops [1]	Suggested cropping systems
Unit 9 (A–3, IIw–1) Iuka fine sandy loam. Iuka very fine sandy loam, local alluvium phase. Ochlockonee fine sandy loam, local alluvium phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, truck crops, vetch, winter peas, lespedeza, and other grasses and legumes.	Annual row crops followed by legumes, and good management of crop residues. Close-growing crops for 2 years and row crops, followed by legumes, for 2 years. Sod one-third of the time and row crops, followed by legumes, two-thirds of the time.
Unit 10 (A–6, IIw–1) Catalpa clay, local alluvium phase.	Cotton, corn, soybeans, small grains, sorghum, alfalfa, sericea lespedeza, white and red clovers, wild winter peas, black medic clover, johnsongrass, dallisgrass, bermudagrass, bahiagrass, fescue, and rescue grass.	Annual row crops and good management of crop residues. Row crops for 4 years and small grains and lespedeza for 2 years. Row crops for 4 years and sod for 4 years.
Unit 11 (A–3, IIIe–1) Cahaba very fine sandy loam, eroded gently sloping phase. Ruston fine sandy loam, gently sloping phase. Ruston fine sandy loam, eroded gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, truck crops, orchard crops, kudzu, vetch, winter peas, annual and sericea lespedezas, and other legumes and grasses.	Sericea lespedeza or sod for 4 years and row crops, followed by cover crops, for 2 years.
Unit 12 (A–6, IIIe–1) Sumter clay, eroded gently sloping phase.	Cotton, corn, soybeans, small grains, sorghum, alfalfa, sericea, Kobe and Korean lespedezas, white clover, black medic. clover, sweet clover, red clover and wild winter peas, johnsongrass, bermudagrass, dallisgrass, bahiagrass, and fescue.	Row crops, followed by cover crops, for 4 years, and sod for 4 years. Row crops, followed by cover crops, for 2 years, and sod for 4 years. Permanent sod, the seeding made in a crop of small grain.
Unit 13 (IIIe–2) Ruston fine sandy loam, severely eroded gently sloping phase.	Cotton, corn, soybeans, small grains, sorghum, truck crops, orchard crops, kudzu, vetch, winter peas, annual and sericea lespedezas, and other legumes and grasses.	Sericea lespedeza or sod for 4 years and row crops, followed by cover crops, for 2 years. Sod for 6 years and row crops, followed by cover crops, for 2 years.
Unit 14 (IIIe–3) Nacogdoches loam, eroded gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sudangrass, orchard crops, vetch, kudzu, winter peas, sericea lespedeza, and other legumes and grasses.	Sericea lespedeza or sod for 4 years and row crops, followed by cover crops, for 2 years.
Unit 15 (IIIe–4) Nacogdoches sandy clay loam, severely eroded gently sloping phase.	Cotton, corn, small grains, millet, sorghum, orchard crops, vetch, kudzu, winter peas, annual and sericea lespedezas, and other grasses and legumes.	Sericea lespedeza or sod for 4 years and row crops, followed by cover crops, for 2 years. Sod crops for 6 years and row crops, followed by cover crops, for 2 years.
Unit 16 (IIIe–6) Boswell fine sandy loam, eroded very gently sloping phase. Boswell fine sandy loam, eroded gently sloping phase.	Cotton, corn, soybeans, small grains, sorghum, sudangrass, truck crops, sericea lespedeza, and grasses and clovers.	Sericea lespedeza or sod for 4 years and cotton or truck crops, followed by cover crops, for 2 years. Sericea lespedeza or sod for 3 years and a row crop, followed by a cover crop, for 1 year.
Unit 17 (IIIe–7) Ora and Dulac soils, gently sloping phases. Ora and Dulac soils, eroded gently sloping phases. Prentiss very fine sandy loam, eroded gently sloping phase. Savannah and Franklinton soils, gently sloping phases. Savannah and Franklinton soils, eroded gently sloping phases. Tilden very fine sandy loam, gently sloping phase. Tilden very fine sandy loam, eroded gently sloping phase.	Cotton, small grains, millet, sudangrass, sorghum, early truck crops, orchard crops, vetch, winter peas, annual and sericea lespedezas, and clovers and grasses.	Sericea lespedeza or sod for 4 years and row crops for 2 years.

units and suggestions for management of each unit—Continued

Fertilizer requirements	Tillage requirements	Supplementary practices for water control	Suitability for trees
Moderate to moderately high for all plant nutrients, lime, and organic matter.	Avoid tillage when soils are wet	Arrangement of crop rows and V- and W-ditches needed to remove excess surface water; diversion terraces may be needed; stabilize streambanks.	Pine trees and hardwoods are suited.
Complete fertilizers are needed	Tillage is difficult; soil shrinks and cracks when dry and should not be tilled when wet.	Needs a complete system for disposing of water, including arrangement of crop rows and use of V- and W-type ditches and secondary ditches; diversion terraces needed where water from hillsides is a problem.	Trees not recommended, but hardwoods do well.
Moderately high for all plant nutrients, lime, and organic matter.	Good tilth fairly easy to maintain; cultivation possible within a wide range of moisture content.	Arrangement of rows on contour, vegetated outlets, and terraces.	Pine trees are well suited.
Complete fertilizers are needed	Tillage is difficult; soil shrinks and cracks when dry and should not be tilled when wet.	Terraces, where practical, so that crop rows can be on the contour; vegetated outlets required for the terraces.	Trees not recommended.
High for all plant nutrients, lime, and organic matter.	Avoid tillage when soil is wet	Needs terraces, vegetated outlets, and crop rows on the contour.	Pine trees are well suited.
Moderately high for all plant nutrients, lime, and organic matter.	Good tilth fairly easy to maintain; cultivation possible within a wide range of moisture content.	Needs vegetated outlets, terraces, and crop rows on the contour.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Avoid tillage when soil is wet	Needs vegetated outlets, terraces, and crop rows on the contour.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Avoid tillage when soils are wet	Needs vegetated outlets, terraces, and crop rows on the contour; diversion terraces needed where water from hillsides is a problem.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Good tilth fairly easy to maintain; cultivation possible within a fairly wide range of moisture content.	Needs vegetated outlets, terraces, and crop rows on the contour.	Pine trees are well suited.

See footnote at end of table.

TABLE 3.—*Soils of Newton County arranged by capability*

Capability unit and soils	Suitable crops [1]	Suggested cropping systems
Unit 18 (IIIe–8) Sawyer fine sandy loam, eroded gently sloping phase. Shubuta fine sandy loam, gently sloping phase. Shubuta fine sandy loam, eroded gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, vetch, winter peas, annual and sericea lespedezas, and clovers and grasses.	Sericea lespedeza or sod for 4 years and row crops, followed by cover crops, for 2 years.
Unit 19 (IIIs–1) Eustis loamy sand, gently sloping dark surface phase. Independence loamy fine sand.	Cotton, soybeans, small grains, early truck crops, orchard crops, and grasses and clovers.	Sod for 4 years and row crops for 2 years. Early truck crops, with frequent application of fertilizer and good management of crop residues.
Unit 20 (IIIs–2) Stough very fine sandy loam, level phase. Stough very fine sandy loam, very gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, and grasses and clovers.	Close-growing crops for 3 years and row crops, followed by cover crops, for 2 years. Small grains and lespedeza for 2 years and a row crop for 1 year.
Unit 21 (A–3, IIIw–1) Mantachie soils. Mantachie very fine sandy loam, local alluvium phase.	Corn, soybeans, millet, sorghum, sudangrass, winter peas, annual lespedeza, and grasses and clovers.	Row crops followed by cover crops, and careful management of crop residues. Small grains for 3 years and row crops for 3 years. Grasses and legumes for 3 years and row crops for 3 years.
Unit 22 (A–6, IIIw–1) Houlka clay.	Corn, sorghum, soybeans, small grains, bermudagrass, fescue, johnsongrass, dallisgrass, white clover, lespedeza, wild winter peas, and black medic clover.	Annual row crops and good management of crop residues. Row crops for 2 years and small grains and lespedeza for 2 years. Row crops for 2 years and sod for 4 years.
Unit 23 (IIIw-2) Johnston loam.	Corn, soybeans, small grains, millet, sorghum, sudangrass, vetch, and grasses and clovers.	Annual row crops, followed by cover crops, and careful management of crop residues. Sod for 3 years and row crops for 3 years. Sod for 4 years and row crops for 2 years.
Unit 24 (IVe-1) Ruston fine sandy loam, sloping phase. Ruston fine sandy loam, eroded sloping phase.	Cotton, corn, soybeans, small grains, truck crops, kudzu, vetch, winter peas, sericea lespedeza, and clovers and grasses.	Sod for 6 years and row crops, followed by cover crops, for 2 years. Sericea lespedeza for 3 years and a row crop for 1 year.
Unit 25 (IVe-2) Ruston fine sandy loam, severely eroded sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, truck crops, kudzu, annual and sericea lespedezas, and clovers and grasses.	Sod for 6 years and row crops, followed by cover crops, for 2 years. Sericea lespedeza for 4 years and a row crop for 1 year.
Unit 26 (IVe–3) Nacogdoches loam, eroded sloping phase.	Cotton, corn, small grains, millet, sorghum, sudangrass, orchard crops, vetch, winter peas, kudzu, annual and sericea lespedezas, and clovers and grasses.	Sod for 6 years and row crops, followed by cover crops, for 2 years. Sericea lespedeza for 4 years and a row crop for 1 year.
Unit 27 (IVe–4) Nacogdoches sandy clay loam, severely eroded sloping phase.	Cotton, corn, small grains, sorghum, kudzu, sericea and annual lespedezas, and clovers and grasses.	Sod for 6 years and row crops, followed by cover crops, for 2 years. Sericea lespedeza or sod for 6 years and a row crop for 1 year.
Unit 28 (IVe–7) Shubuta clay loam, severely eroded very gently sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, and clovers and grasses.	Sod for 6 years and row crops, followed by cover crops, for 2 years. Sod for 6 years and a row crop for 1 year.
Unit 29 (IVe–8) Ora fine sandy loam, eroded sloping phase. Prentiss very fine sandy loam, eroded sloping phase. Sawyer fine sandy loam, eroded sloping phase. Shubuta fine sandy loam, eroded sloping phase. Shubuta fine sandy loam, sloping phase. Tilden very fine sandy loam, eroded sloping phase.	Cotton, corn, soybeans, small grains, millet, sorghum, sudangrass, vetch, winter peas, sericea and annual lespedezas, and clovers and grasses.	Sod for 6 years and row crops, followed by cover crops, for 2 years. Sericea lespedeza for 4 years and a row crop for 1 year.

units and suggestions for management of each unit—Continued

Fertilizer requirements	Tillage requirements	Supplementary practices for water control	Suitability for trees
High for all plant nutrients, lime, and organic matter.	Good tilth fairly easy to maintain; avoid tillage when soils are wet.	Needs vegetated outlets, terraces, and crop rows on the contour.	Pine trees are well suited.
Very high for all plant nutrients, lime, and organic matter.	Good tilth easy to maintain; cultivation possible within a wide range of moisture content.	Arrangement of crop rows and, for sloping areas, vegetated outlets, terraces, and crop rows on the contour.	Pine trees are well suited.
Very high for all plant nutrients, lime, and organic matter.	Avoid tillage when soils are wet	Arrangement of crop rows and W-ditches needed to remove excess surface water; diversion terraces needed in some places.	Pine trees are well suited.
Moderately high for all plant nutrients, lime, and organic matter.	Avoid tillage when soils are wet	Field drainage and V- or W-ditches needed for removal of excess surface water; arrangement of crop rows and diversion terraces also needed.	Lowland hardwoods and pines are well suited.
Complete fertilizers are needed	Tillage difficult because of clay surface soil.	Needs complete system for disposing of water, including arrangement of crop rows and use of V- and W-type ditches emptying into secondary ditches; diversion terraces needed in places where water from hillsides is a problem.	Hardwoods and pines are well suited.
Moderately high for all plant nutrients, lime, and organic matter.	Avoid tillage when soil is wet	Needs complete drainage system, including secondary ditches and W-ditches.	Hardwoods and pines are suitable if soil is drained.
High for all plant nutrients, lime, and organic matter.	Fairly good tilth can be maintained; cultivation possible within a fairly wide range of moisture content.	Needs vegetated outlets, terraces where practical, and crop rows on the contour.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Fairly good tilth can be maintained; cultivation possible within a fairly wide range of moisture content.	Needs vegetated outlets, terraces where practical, and crop rows on the contour.	Pine trees are well suited.
Moderately high for all plant nutrients, lime, and organic matter.	Fairly good tilth easy to maintain; cultivation possible within a fairly wide range of moisture content.	Needs vegetated outlets, terraces where practical, and crop rows on the contour.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Avoid tillage when soil is wet	Needs vegetated outlets, terraces where practical, and crop rows on the contour.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Avoid tillage when soil is wet	Needs vegetated outlets, terraces, and crop rows on the contour.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Fairly good tilth easy to maintain; cultivation possible within a fairly wide range of moisture content.	Needs vegetated outlets, terraces where practical, and crop rows on the contour.	Pine trees are well suited.

See footnote at end of table.

TABLE 3.—*Soils of Newton County arranged by capability*

Capability unit and soils	Suitable crops [1]	Suggested cropping systems
Unit 30 (IVe–9) Mayhew fine sandy clay loam, very gently sloping phase. Ora and Dulac soils, severely eroded gently sloping phases.	Cotton, small grains, vetch, winter peas, and clovers and grasses.	Sod for 6 years and a row crop for 1 year. Sericea lespedeza for 4 years and a row crop for 1 year.
Unit 31 (IVs–1) Bibb soils. Chastain soils.	Soybeans, sorghum, oats, vetch, and clovers and grasses.	Sod for 6 years and row crops, followed by cover crops, for 2 years. Sod for 4 years and row crops, followed by cover crops, for 2 years.
Unit 32 (IVs–2) Eutaw-Vaiden clays, level phases. Eutaw-Vaiden clays, very gently sloping phases. Vaiden-Eutaw clays, very gently sloping phases.	Corn, soybeans, small grains, millet, sorghum, sudangrass, and clovers and grasses.	Oats and lespedeza for 2 years, soybeans for 1 year, and corn for 1 year. Sod for 4 years and row crops for 2 years. Permanent sod seeded in a small grain.
Unit 33 (IVs–4) Mayhew fine sandy clay loam, nearly level phase.	Sweetpotatoes, strawberries, and sorghum.	Row crops for 2 years and sod for 4 years. Row crops for 2 years and small grains and lespedeza for 3 years.
Unit 34 (IVw–1) Una clay, local alluvium phase.	Corn, soybeans, sorghum, and clovers and grasses.	Lespedeza for 2 years and row crops for 2 years. Sod for 4 years and row crops for 2 years.
Unit 35 (Vs–1) Myatt very fine sandy loam.	Not suitable for crops; fair for grasses and clovers for hay and pasture.	
Unit 36 (VIe–1) Nacogdoches loam, eroded strongly sloping phase. Nacogdoches loam, strongly sloping phase. Nacogdoches sandy clay loam, severely eroded strongly sloping phase. Ruston fine sandy loam, eroded strongly sloping phase. Ruston fine sandy loam, severely eroded strongly sloping phase. Ruston fine sandy loam, strongly sloping phase.	Not suitable for crops; bermudagrass, bahiagrass, sericea lespedeza, kudzu, and crimson clover suitable for hay and pasture.	
Unit 37 (VIe–2) Shubuta fine sandy loam, strongly sloping phase. Shubuta fine sandy loam, eroded strongly sloping phase.	Not suitable for crops; bermudagrass, bahiagrass, sericea lespedeza, and crimson clover are fair for hay and pasture.	
Unit 38 (A–3, VIe–3) Shubuta clay loam, severely eroded gently sloping phase. Shubuta clay loam, severely eroded sloping phase. Shubuta clay loam, severely eroded strongly sloping phase.	Not suitable for crops; bermudagrass, bahiagrass, sericea lespedeza, and white clover are fair for hay and pasture.	
Unit 39 (A–6, VIe–3) Binnsville clay, eroded very gently sloping marly phase. Binnsville clay, severely eroded gently sloping marly phase. Vaiden-Eutaw clays, eroded gently sloping phases. Vaiden-Eutaw clays, eroded sloping phases.	Not suitable for crops; bermudagrass, dallisgrass, johnsongrass, wild winter peas, and white clover are fair for pasture; black medic clover is suited to the Binnsville soils.	

units and suggestions for management of each unit—Continued

Fertilizer requirements	Tillage requirements	Supplementary practices for water control	Suitability for trees
High for all plant nutrients, lime, and organic matter.	Avoid tillage, especially of more eroded parts, when soils are wet.	Needs vegetated outlets, terraces where practical, and crop rows on the contour.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Avoid tillage when soils are wet----	Needs complete drainage system, including secondary ditches, W-ditches, and proper arrangement of crop rows to remove excess surface water.	Hardwoods and pines are well suited.
High for all plant nutrients, lime, and organic matter.	Avoid tillage when soils are wet----	Needs arrangement of crop rows and W-ditches to remove excess surface water.	Pine trees are well suited.
Complete fertilizers and lime are needed.	Avoid tillage when soil is wet------	Needs arrangement of crop rows and W-ditches to remove excess surface water.	Pine trees are well suited.
High for all plant nutrients, lime, and organic matter.	Avoid tillage when soil is wet------	Needs arrangement of crop rows and V- and W-ditches emptying into secondary ditches.	Hardwoods and pines are well suited.
--------	--------	V- and W-ditches needed to remove surface water if soil is used for pasture.	Hardwoods and pines are fairly well suited.
--------	--------	--------	Pine trees are well suited.
--------	--------	--------	Pine trees are well suited.
--------	--------	--------	Pine trees are well suited.
--------	--------	--------	Pine trees suitable for Vaiden-Eutaw soils but not for Binnsville soils.

See footnote at end of table.

TABLE 3.—*Soils of Newton County arranged by capability*

Capability unit and soils	Suitable crops [1]	Suggested cropping systems
Unit 40 (VIe-5) Boswell fine sandy loam, eroded sloping phase. Boswell fine sandy loam, eroded strongly sloping phase. Lauderdale stony fine sandy loam, eroded gently sloping phase. Lauderdale stony fine sandy loam, sloping to moderately steep phases. Lauderdale-Boswell complex, eroded gently sloping phases. Lauderdale-Boswell complex eroded sloping phases. Lauderdale-Boswell complex, strongly sloping and moderately steep phases.	Not suitable for crops; bermudagrass, bahiagrass, kudzu, and crimson clover are fair for hay and pasture.	
Unit 41 (VIe-7) Boswell sandy clay loam, severely eroded gently sloping phase. Boswell sandy clay loam, severely eroded sloping phase.	Not suitable for crops; bermudagrass, bahiagrass, crimson clover, and lespedeza are suitable for hay or pasture.	
Unit 42 (VIs-1) Eustis loamy sand, strongly sloping dark surface phase.	Not suitable for crops; crimson clover, sericea lespedeza, bahiagrass, and bermudagrass are fairly well suited for hay and pasture.	
Unit 43 (VIIe-1) Ruston fine sandy loam, moderately steep phase. Ruston fine sandy loam, eroded moderately steep phase. Ruston fine sandy loam, severely eroded moderately steep phase. Nacogdoches loam, eroded moderately steep phase.	Not suitable for crops; bermudagrass, sericea lespedeza, and kudzu fairly well suited for pasture.	
Unit 44(VIIe-4) Boswell fine sandy loam, moderately steep phase. Shubuta and Cuthbert soils, moderately steep phases.	Not suitable for crops or pasture	

[1] The sequence in which the crops are named has no effect on their relative suitability for the soils of the capability unit. Also because soils are progressively more limited in use from class I through class VIII, the suitability of a crop is not equal in all capability

units and suggestions for management of each unit—Continued

Fertilizer requirements	Tillage requirements	Supplementary practices for water control	Suitability for trees
			Pine trees are well suited.
			Pine trees are well suited.
			Pine trees are well suited.
			Pine trees are well suited.
			Pine trees are well suited.

units. For example, row crops are listed as suitable for capability units in class I through IV, but this does not mean that soils of a capability unit in class IV are as good for row crops as soils belonging to a capability unit in class I, II, or III.

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CAPABILITY UNIT 11 (A 3, IIIe-1)

Gently sloping well-drained soils on uplands:

Cahaba very fine sandy loam, eroded gently sloping phase.
Ruston fine sandy loam, gently sloping phase.
Ruston fine sandy loam, eroded gently sloping phase.

The subsoils are moderately rapidly permeable yellowish-red sandy clay loams. Slopes range from 5 to 8 percent, and surface runoff requires control. Most of the acreage has been only slightly or moderately eroded, but in a few small areas most of the surface soil has been washed away. The capacity for holding available moisture is moderate. The supply of organic matter and the fertility are fairly low, and the soils are strongly acid. These soils are easily tilled and respond well to fertilizer. They are suited to sod crops, but some cultivated crops can be grown (see table 3).

CAPABILITY UNIT 12 (A-6, IIIe-1)

Gently sloping somewhat poorly drained clayey soil on uplands of the Blacklands (Prairie):

The one soil of this capability unit, Sumter clay, eroded gently sloping phase, has a clay surface soil and clay subsoil. Moisture relations are not favorable. Drainage is somewhat poor, the permeability is slow to very slow, control of runoff is needed, and the capacity to hold available moisture is moderate in the top 11 inches but low below that depth. The supply of organic matter and the fertility are low. The soil is alkaline. Cracks form in this soil when it dries, and tillage is fairly difficult. The soil is suitable for sod crops, but it can be used occasionally for cultivated crops (see table 3).

CAPABILITY UNIT 13 (IIIe-2)

Severely eroded gently sloping well-drained soil on uplands:

The one soil of this capability unit is Ruston fine sandy loam, severely eroded gently sloping phase. Its plow layer, a mixture of the original surface soil and subsoil material, ranges from fine sandy loam to sandy loam. The subsoil is a moderately rapidly permeable yellowish-red sandy clay loam.

Slopes range from 5 to 8 percent, and surface runoff requires control. The capacity for holding available moisture is moderate. The supply of organic matter and the fertility are low. The soil is strongly acid. It is most suitable for trees and sod crops, but it is also fairly well suited to many kinds of clean-tilled crops (see table 3).

CAPABILITY UNIT 14 (IIIe-3)

Slightly to moderately eroded gently sloping well-drained soil with clay to sandy clay subsoil:

One soil is in this capability unit, Nacogdoches loam, eroded gently sloping phase. In most places the surface soil is 4 to 6 inches thick. In a few areas, however, the original surface soil has been washed away and the moderately slowly permeable dark-red clay to sandy clay of the subsoil is at the surface.

The soil is on upland slopes of 5 to 8 percent; consequently, surface runoff is medium to rapid and erosion is a moderate hazard. The soil is medium acid to strongly acid, low in organic matter, and medium in fertility. It has moderate ability to hold moisture available for plants.

If surface runoff is controlled, good crop rotations are used, and other desirable management is practiced, this soil is suitable for many kinds of crops (see table 3).

CAPABILITY UNIT 15 (IIIe-4)

Severely eroded gently sloping well-drained upland soil with clay to sandy clay subsoil:

The one soil in this capability unit is Nacogdoches sandy clay loam, severely eroded gently sloping phase. The plow layer, a mixture of the original surface soil and the subsoil, ranges from sandy clay loam in the less eroded areas to clay in the more eroded places. The subsoil is a moderately slowly permeable dark-red clay to sandy clay.

Slopes range from 5 to 8 percent, and surface runoff has resulted in severe erosion. The soil is medium to strongly acid, low in organic matter, and medium in fertility. Its capacity for holding available moisture is moderate.

This soil is fair for row crops and pasture if surface runoff is controlled and good management is used (see table 3).

CAPABILITY UNIT 16 (IIIe-6)

Very gently sloping to gently sloping moderately well drained soils on uplands:

Boswell fine sandy loam, eroded very gently sloping phase.
Boswell fine sandy loam, eroded gently sloping phase.

The surface soils consist of 4 to 6 inches of fine sandy loam; the subsoils are moderately slowly permeable to slowly permeable red clay.

Slopes range from 2 to 8 percent. Moisture relations are not particularly favorable. Surface runoff is an erosion hazard. The capacity for holding available moisture is moderate in the upper part of the profile but low in the lower horizons. The supply of organic matter and the fertility are low. The soils are strongly acid. They are suitable for sod crops and trees; their productivity for row crops is fairly low (see table 3).

CAPABILITY UNIT 17 (IIIe-7)

Gently sloping mostly moderately well drained soils with fragipans:

Ora and Dulac soils, gently sloping phases.
Ora and Dulac soils, eroded gently sloping phases.
Prentiss very fine sandy loam, eroded gently sloping phase.
Savannah and Franklinton soils, gently sloping phases.
Savannah and Franklinton soils, eroded gently sloping phases.
Tilden very fine sandy loam, gently sloping phase.
Tilden very fine sandy loam, eroded gently sloping phase.

These soils have very fine sandy loam to silt loam surface soils. The moderately permeable sandy clay loam to silty clay loam subsoils overlie thick, slowly permeable fragipans at a depth of about 24 inches.

These soils are on slopes of 5 to 8 percent on the uplands and terraces. Moisture relations are not favorable. Surface runoff results in a slight to moderate erosion hazard. The capacity for holding available moisture is moderate in the upper part of the profiles but low in the lower horizons. The supply of organic matter and the fertility are low. The soils are medium acid to strongly acid. They are more suitable for sod crops but are fair for row crops (see table 3).

CAPABILITY UNIT 18 (IIIe-8)

Gently sloping somewhat poorly drained to moderately well drained soils on uplands:

Sawyer fine sandy loam, eroded gently sloping phase.
Shubuta fine sandy loam, gently sloping phase.
Shubuta fine sandy loam, eroded gently sloping phase.

These soils have fine sandy loam surface soils that, in most places, are 4 to 6 inches thick. In a few areas,

however, the original surface soil has been washed away and the slowly permeable to moderately slowly permeable, brownish-yellow to dark-brown sandy clay subsoils are at the surface.

Slopes range from 5 to 8 percent. Control of surface runoff is required. The capacity for holding available moisture is moderate in the upper part of the profiles but low in the lower horizons. The content of organic matter and the fertility are low. The soils are strongly acid. They are suited to many kinds of crops, provided surface runoff is controlled, a good crop rotation is used, and other good management is followed (see table 3).

CAPABILITY UNIT 19 (IIIs-1)

Nearly level to gently sloping droughty soils on uplands:

Eustis loamy sand, gently sloping dark surface phase.
Independence loamy fine sand.

The surface soils and subsoils are loamy sands or loamy fine sands. Slopes range from 0 to 8 percent. Moisture relations are poor. The natural drainage is somewhat excessive, permeability is rapid, and the capacity for holding available moisture is low. The supply of organic matter and the fertility are low. The soils are strongly acid. They are deep and easily tilled, but fertilizer leaches out readily. These soils are suitable for early truck crops or trees (see table 3).

CAPABILITY UNIT 20 (IIIs-2)

Soils with fragipans, on terraces, moderately low fertility and capacity for available moisture:

Stough very fine sandy loam, level phase.
Stough very fine sandy loam, very gently sloping phase.

The very fine sandy loam surface soils are about 8 to 10 inches thick and easily tilled. The moderately permeable very pale brown sandy clay loam subsoils overlie slowly permeable fragipans at a depth of about 23 inches.

Slopes range from 0 to 5 percent. The capacity for holding available moisture is moderate above the pan and low in the pan. The supply of organic matter and the fertility are low. These strongly acid soils are well suited to sod crops; they are fair for several cultivated crops (see table 3).

CAPABILITY UNIT 21 (A-3, IIIw-1)

Nearly level somewhat poorly drained soils on flood plains that are subject to overflow:

Mantachie soils.
Mantachie very fine sandy loam, local alluvium phase.

The surface soils are thick, easily tilled sandy loams to silt loams. The subsurface layers are moderately permeable light-gray sandy loams to clay loams.

Slopes range from 0 to 2 percent, and moisture relations are fair. The ability to hold available moisture is moderate. The supply of organic matter and the fertility are low. These soils are strongly acid. They are well suited to grasses; other crops can be grown with fair success (see table 3).

CAPABILITY UNIT 22 (A-6, IIIw-1)

Nearly level "cold-natured" clayey soil on Blacklands (Prairie) bottoms that are subject to overflow:

The one soil in this capability unit is Houlka clay. Both its surface soil and subsoil are clay. Slopes range from 0 to 2 percent, and moisture relations are poor. The natural drainage is somewhat poor, the permeability is slow to very slow, and the capacity for holding available moisture is somewhat limited. The content of organic matter is low, the natural fertility is medium to low, and the reaction is slightly acid to neutral. This soil shrinks and cracks when it dries and is somewhat difficult to cultivate. It is well suited to sod crops and fairly well suited to several other crops (see table 3).

CAPABILITY UNIT 23 (IIIw-2)

Nearly level poorly drained soil high in organic matter and subject to overflow:

The one soil in this capability unit, Johnston loam, has a thick, black, easily tilled surface soil. The subsurface layer, a moderately permeable very fine sandy loam, overlies a slowly permeable sandy clay at a depth of about 25 inches.

This soil is on base slopes or in depressions that are subject to overflow. The slope range is 0 to 2 percent, and erosion is not a problem. The capacity for holding available moisture is moderate to high. The soil is medium acid to strongly acid. The fertility level is fairly low. Where properly drained, this soil is suitable for several kinds of cultivated crops and sod crops (see table 3).

CAPABILITY UNIT 24 (IVe-1)

Slightly or moderately eroded sloping well-drained soils on uplands:

Ruston fine sandy loam, sloping phase.
Ruston fine sandy loam, eroded sloping phase.

The surface soils are normally 4 to 10 inches thick, but the moderately rapidly permeable yellowish-red sandy clay loam subsoils are at the surface in a few places.

Slopes range from 8 to 12 percent. Surface runoff requires control. The capacity for holding available moisture is moderate to somewhat limited. The supply of organic matter and the fertility are low. These soils are strongly acid. They are well suited to trees and sod crops; they may be used occasionally for cultivated crops (see table 3).

CAPABILITY UNIT 25 (IVe-2)

Severely eroded sloping well-drained soils on uplands:

The one soil of this capability unit, Ruston fine sandy loam, severely eroded sloping phase, has a plow layer consisting of original surface soil mixed with subsoil. The subsoil is a moderately rapidly permeable yellowish-red sandy clay loam.

Slopes range from 8 to 12 percent, and surface runoff has caused severe erosion. The capacity for holding available moisture is moderate to somewhat limited. The content of organic matter and the fertility are low. The soil is strongly acid. It is well suited to trees or sod crops, but cultivated crops can be grown occasionally (see table 3).

CAPABILITY UNIT 26 (IVe-3)

Slightly to moderately eroded sloping well-drained soil with clay to sandy clay subsoil:

The one soil of this capability unit is Nacogdoches loam, eroded sloping phase. In most places its surface soil is 2 to 4 inches thick, but the moderately permeable dark-red clay to sandy clay subsoil is at the surface in a few areas. The soil is on upland slopes of 8 to 12 percent, and surface runoff requires controls to prevent ero-

sion. The capacity for holding available moisture is moderate to somewhat limited. The soil is medium acid to strongly acid, low in organic matter, and medium in fertility. It is well suited to trees or sod crops, but occasionally it can be used for cultivated crops (see table 3).

CAPABILITY UNIT 27 (IVe-4)

Severely eroded sloping well-drained upland soil with clay to sandy clay subsoil:

The one soil of this capability unit is Nacogdoches sandy clay loam, severely eroded sloping phase. The plow layer is a mixture of original surface soil and subsoil, and in the more eroded areas the moderately slowly permeable dark-red clay to sandy clay subsoil is at the surface.

Slopes range from 8 to 12 percent, and surface runoff has resulted in erosion. The soil is medium acid to strongly acid, low in organic matter, and medium in fertility. The capacity for holding moisture available is moderate to somewhat limited. This soil is suitable for trees or sod crops; it can be used occasionally for cultivated crops (see table 3).

CAPABILITY UNIT 28 (IVe-7)

Severely eroded very gently sloping moderately well drained soil on uplands:

Shubuta clay loam, severely eroded very gently sloping phase, is the only soil in this capability unit. The plow layer is a mixture of the original surface soil and subsoil material. The moderately slowly permeable to slowly permeable dark-brown sandy clay subsoil is at the surface in several areas.

Slopes range from 2 to 5 percent, and surface runoff has resulted in erosion. The capacity of the soil for holding available moisture is limited. The supply of organic matter and the fertility are low. The soil is strongly acid. It is suited to trees or sod crops but can be cultivated occasionally (see table 3).

CAPABILITY UNIT 29 (IVe-8)

Slightly to moderately eroded sloping soils with either fragipans or clayey layers:

Ora fine sandy loam, eroded sloping phase.
Prentiss very fine sandy loam, eroded sloping phase.
Sawyer fine sandy loam, eroded sloping phase.
Shubuta fine sandy loam, eroded sloping phase.
Shubuta fine sandy loam, sloping phase.
Tilden very fine sandy loam, eroded sloping phase.

Most of the soils have easily tilled surface soils of fine sandy loam or very fine sandy loam that are 3 to 10 inches thick. In some areas, however, the original surface soils have been washed away and the sandy clay to sandy clay loam subsoils are exposed.

Slopes range from 8 to 12 percent, and moisture relations are not favorable. Surface runoff requires control. Sawyer fine sandy loam, eroded sloping phase, is somewhat poorly drained, but the other soils are moderately well drained. Permeability is slow to moderate. Several of the soils have fragipans at a depth of about 20 inches; consequently, their capacity to hold available moisture is somewhat limited. The soils of this capability unit are low in organic matter and in fertility and are strongly acid. They are suited to sod crops or trees, but they can be used occasionally for cultivated crops (see table 3).

CAPABILITY UNIT 30 (IVe-9)

Moderately shallow very gently sloping to gently sloping soils on uplands:

Mayhew fine sandy clay loam, very gently sloping phase.
Ora and Dulac soils, severely eroded gently sloping phases.

The surface soils range from sandy loam to silty clay loam and, in many places, are a mixture of the original surface soil and the subsoil. Either fragipans or clay horizons occur at depths of about 16 to 20 inches.

Slopes range from 2 to 8 percent. Moisture relations are poor. Surface runoff requires control. Natural drainage is poor to moderately good, permeability is slow to moderate, and the capacity for holding available moisture is limited. The supply of organic matter and the fertility are low. The soils are medium acid to strongly acid. They are suitable for sod crops, but they can be used occasionally for cultivated crops (see table 3).

CAPABILITY UNIT 31 (IVs-1)

Poorly drained "cold-natured" soils on bottoms subject to overflow:

Bibb soils.
Chastain soils.

The surface soils range from light-gray to gray silt loam to sandy loam. The underlying horizons are gray sandy clay loams. Slopes range from 0 to 2 percent. Moisture relations are not favorable. Permeability is slow to moderately slow, and the capacity for holding available moisture is somewhat limited. The supply of organic matter and the fertility are low. The soils are strongly acid. They are suitable for grasses and clover and can be cultivated occasionally (see table 3).

CAPABILITY UNIT 32 (IVs-2)

Poorly drained to somewhat poorly drained clays on Blackland (Prairie) uplands:

Eutaw-Vaiden clays, level phases.
Eutaw-Vaiden clays, very gently sloping phases.
Vaiden-Eutaw clays, very gently sloping phases.

The surface soils and subsoils are medium acid clays that overlie calcareous clay at a depth of about 44 inches. Slopes range from 0 to 5 percent. Moisture relations are poor. Permeability is very slow, and the capacity to hold available moisture is somewhat limited. These soils have been only slightly eroded. They are difficult to till because they shrink and crack when they dry. Their supply of organic matter and their fertility are both low. Although these soils are well suited to sod crops, they can be cultivated occasionally (see table 3).

CAPABILITY UNIT 33 (IVs-4)

Nearly level poorly drained fine sandy clay loam soil with sandy clay subsoil:

The one soil in this capability unit is Mayhew fine sandy clay loam, nearly level phase. In most places the surface soil is 6 to 8 inches deep, but in a few areas most of this layer has been washed away.

Slopes range from 0 to 2 percent, and moisture relations are poor. Permeability is slow, and the capacity for holding available moisture is somewhat limited. The soil is medium acid to strongly acid, low in organic matter, and low in fertility. It is suited to sod crops but can be used occasionally for cultivated crops (see table 3).

CAPABILITY UNIT 34 (IVw-1)

Level poorly drained clay soil on Blackland (Prairie) bottoms subject to overflow:

One soil is in this capability unit, Una clay, local alluvium phase. Its surface soil and subsoil are both slowly permeable clay that shrinks and cracks when it dries.

The soil is on slopes of 0 to 2 percent in small drains in the southwestern corner of the county. It is medium acid, low in organic matter, and low in fertility. Its capacity for holding available moisture is moderate. There is no erosion problem. Nevertheless, the soil is not suitable for cultivation, because it has slow surface runoff and a slow infiltration rate, is in low positions that are subject to overflow, and has poor tilth. This soil is suited to trees and sod crops (see table 3).

CAPABILITY UNIT 35 (Vs-1)

Nearly level, sandy, infertile, somewhat wet soil on terraces:

The one soil of this capability unit is Myatt very fine sandy loam. It has a thick very fine sandy loam surface soil and a slowly permeable gray sandy clay subsoil. Normally, there is a weak pan layer about 10 inches thick at a depth of approximately 28 inches.

Slopes range from 0 to 2 percent, and moisture relations are poor. Both surface runoff and internal drainage are slow. The capacity for holding available moisture is limited. Soil aeration is poor. The supply of organic matter and the natural fertility are low. The soil is strongly acid. It is suited to sod crops or trees (see table 3).

CAPABILITY UNIT 36 (VIe-1)

Slightly to severely eroded strongly sloping well-drained upland soils:

Nacogdoches loam, eroded strongly sloping phase.
Nacogdoches loam, strongly sloping phase.
Nacogdoches sandy clay loam, severely eroded strongly sloping phase.
Ruston fine sandy loam, eroded strongly sloping phase.
Ruston fine sandy loam, severely eroded strongly sloping phase.
Ruston fine sandy loam, strongly sloping phase.

The surface soils range from fine sandy loam to sandy clay loam, depending on the amount of the original surface soil that has been washed away. In many of the areas, the plow layer is a mixture of the original surface soil and subsoil. There are rills and gullies in many areas. The subsoils range from moderately rapidly permeable yellowish-red sandy clay loams, in the Ruston soils, to moderately slowly permeable dark-red clays to sandy clays, in the Nacogdoches soils.

Slopes range from 12 to 17 percent, and the rapid surface runoff is a serious problem. The ability of the soils to hold available moisture is moderate to fairly low. The content of organic matter is low, the natural fertility is low to medium, and the reaction is medium to strongly acid. These soils are suitable for trees but can be used for sod crops (see table 3).

CAPABILITY UNIT 37 (VIe-2)

Slightly to moderately eroded strongly sloping moderately well drained upland soils:

Shubuta fine sandy loam, strongly sloping phase.
Shubuta fine sandy loam, eroded strongly sloping phase.

The surface soils are fine sandy loams that range from 4 to 10 inches in thickness. The subsoils are moderately slowly permeable to slowly permeable dark-brown sandy clays. Slopes range from 12 to 17 percent, and rapid surface runoff is a serious problem. The capacity for retaining available moisture is low. The supply of organic matter and the natural fertility are low. The soils are strongly acid. They are suitable for trees but can be used for sod crops (see table 3).

CAPABILITY UNIT 38 (A-3, VIe-3)

Severely eroded gently sloping to strongly sloping moderately well drained soils on uplands:

Shubuta clay loam, severely eroded gently sloping phase.
Shubuta clay loam, severely eroded sloping phase.
Shubuta clay loam, severely eroded strongly sloping phase.

The surface soils are clay loams that are 3 to 5 inches thick. The subsoils are dark-brown sandy clays. Slopes range from 5 to 17 percent, and moisture relations are poor. Surface runoff has resulted in severe erosion. Permeability is moderately slow to slow, and the capacity for holding available moisture is low. The supply of organic matter and the fertility are low. The soils are strongly acid. They are suitable for trees (see table 3).

CAPABILITY UNIT 39 (A-6, VIe-3)

Moderately to severely eroded very gently sloping to sloping poorly drained to somewhat poorly drained soils of the Blackland (Prairie) uplands:

Binnsville clay, eroded very gently sloping marly phase.
Binnsville clay, severely eroded gently sloping marly phase.
Vaiden-Eutaw clays, eroded gently sloping phases.
Vaiden-Eutaw clays, eroded sloping phases.

The surface soils and subsoils are clays that shrink and crack severely when they dry. Slopes range from 2 to 12 percent, and moisture relations are poor. Surface runoff makes erosion a hazard. Permeability is very slow to slow, and the capacity for holding available moisture is fairly low.

The Binnsville soils are fairly high in both organic matter and fertility, and their reaction is alkaline. The Vaiden-Eutaw soils, however, are low in both organic matter and in fertility and are medium acid. The soils of this capability unit are suitable for sod crops (see table 3).

CAPABILITY UNIT 40 (VIe-5)

Slightly to moderately eroded gently sloping to moderately steep soils on uplands:

Boswell fine sandy loam, eroded sloping phase.
Boswell fine sandy loam, eroded strongly sloping phase.
Lauderdale stony fine sandy loam, eroded gently sloping phase.
Lauderdale stony fine sandy loam, sloping to moderately steep phases.
Lauderdale-Boswell complex, eroded gently sloping phases.
Lauderdale-Boswell complex, eroded sloping phases.
Lauderdale-Boswell complex, strongly sloping and moderately steep phases.

The texture and thickness of the surface soils and subsoils are variable. Slopes range from 5 to 17 percent or more. Moisture relations are poor. Surface runoff requires extensive control. The natural drainage ranges from somewhat poor to excessive. The permeability of the soils and their capacity for holding available moisture are both variable. These soils are strongly acid and low in organic matter and in fertility. Trees or sod crops are suitable for these soils (see table 3)

CAPABILITY UNIT 41 (VIe-7)

Severely eroded gently sloping to sloping moderately well drained upland soils with red clay subsoils:

Boswell sandy clay loam, severely eroded gently sloping phase.
Boswell sandy clay loam, severely eroded sloping phase.

Most of the original fine sandy loam surface soil has been washed away. The plow layer for these soils is now a sandy clay loam made up of remnants of the original surface soil and material from the subsoil. The subsoils are moderately slowly permeable to slowly permeable red clays.

Slopes range from 5 to 12 percent, and surface runoff is a serious problem. The capacity for holding water available to plants is low. The natural fertility and the supply of organic matter are also low. These soils are medium acid to strongly acid. They are suited to trees (see table 3).

CAPABILITY UNIT 42 (VIs-1)

Strongly sloping droughty soil on uplands:

The one soil of this capability unit is Eustis loamy sand, strongly sloping dark surface phase. It has a loamy sand texture in both the surface soil and subsoil. Slopes range from 12 to 17 percent, and moisture relations are poor. The natural drainage is somewhat excessive, the permeability is very rapid, and the capacity for holding available moisture is low. The supply of organic matter and the fertility are low. The soil is strongly acid. It is suited to trees (see table 3).

CAPABILITY UNIT 43 (VIIe-1)

Moderately steep well drained soils on uplands:

Ruston fine sandy loam, moderately steep phase.
Ruston fine sandy loam, eroded moderately steep phase.
Ruston fine sandy loam, severely eroded moderately steep phase.
Nacogdoches loam, eroded moderately steep phase.

The surface soils are 6 to 12 inches deep in the less eroded areas, but, in severely eroded places, the surface layer is a mixture of the original surface soil and subsoil material. The subsoils range from moderately rapidly permeable yellowish-red sandy clay loams, in the Ruston soils, to moderately slowly permeable dark-red clays to sandy clays, in the Nacogdoches soil.

Slopes are steeper than 17 percent, and surface runoff is a serious problem. The soils have had slight to severe erosion; they erode readily if not protected by a good cover. The supply of organic matter and the fertility are low. The soils are strongly acid. They are suitable for trees but can be used for sod crops (see table 3).

CAPABILITY UNIT 44 (VIIe-4)

Moderately steep moderately well drained upland soils with surface soils variable in texture and thickness:

Boswell fine sandy loam, moderately steep phase.
Shubuta and Cuthbert soils, moderately steep phases.

The surface soils are variable both in texture and in thickness. They erode readily where not protected by a good cover. The underlying material varies from clays to sands.

The slopes are greater than 17 percent. Moisture relations are poor. Surface runoff is rapid to very rapid, the permeability is moderately slow to slow, and the capacity for holding available moisture is low. The supply of organic matter and the fertility are low. These soils are strongly acid. They are suitable for trees (see table 3).

Estimated Yields

Listed in table 4 are average yields to be expected on the soils of Newton County under two levels of management. In columns A of this table are yields to be expected under the management ordinarily practiced in the county. In columns B are yields to be expected under improved management, which includes use of planned crop rotations; selection of crops suitable for the soil; adequate fertilization of all crops; return of organic matter and crop residues to the soil; and, where needed, terracing, farming on the contour, and providing adequate drainage.

The yield estimates are based on observations made during the course of the survey and on interviews with farmers and other agricultural workers. Some research data were available, and they were considered in making the estimates. The yields in table 4 are estimated averages for the county, not for any particular farm or tract. They indicate, however, the response the different soils will make when management is improved.

Engineering Properties of the Soils

The information in this section will help engineers to select sites for buildings and other structures; to choose locations for highways and airports; to determine the trafficability of soils; to locate sand and gravel for use in construction; and to plan dams, ponds, and other structures to control floods and conserve soil and water.

Even though the soil maps and the accompanying report are too generalized for some engineering purposes, they provide information valuable in planning detailed field surveys and tests to determine the in-place condition of soils at proposed sites for construction. After testing the soil materials and observing their behavior in place and under varying conditions, the engineer can anticipate, to some extent, the properties of individual soils wherever they are mapped.

Table 5 was prepared mainly for agricultural engineers, but it includes information important in other fields of engineering. More information about soils that will be useful to engineers can be obtained by referring to the sections, Soils of Newton County, and Environment and Classification of the Soils.

Some of the terms used by the soil scientist may not be familiar to the engineer; other terms, though familiar, have special meaning in soil science. The terms used in table 5 and other special terms used in this section are defined in the Glossary or in the subsection, How Soils are Mapped.

TABLE 4.—*Estimated average acre yields of the principal crops under two levels of management*

[Yields in columns A are obtained under common levels of management; yields in columns B are obtained under improved management; absence of yield indicates crop is poorly suited to the soil and is seldom grown on it]

Soil	Cotton		Corn		Oats		Permanent pasture	
	A	B	A	B	A	B	A	B
	Lb.	*Lb*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Acres per animal unit* [1]	*Acres per animal unit* [1]
Bibb soils							4	3
Binnsville clay:								
Eroded very gently sloping marly phase							4	3
Severely eroded gently sloping marly phase							4	3
Boswell fine sandy loam:								
Eroded very gently sloping phase	200	350			30	60	4	3
Eroded gently sloping phase	200	350			30	60	4	3
Eroded sloping phase	150	300			25	50	5	3
Eroded strongly sloping phase								
Moderately steep phase								
Boswell sandy clay loam:								
Severely eroded gently sloping phase							5	4
Severely eroded sloping phase							5	4
Cahaba very fine sandy loam:								
Eroded very gently sloping phase	400	625	45	75	50	100	3	2
Level phase	400	625	45	75	50	100	3	2
Eroded gently sloping phase	350	600	35	60	40	90	3	2
Catalpa clay, local alluvium phase		500		60		80	3	2
Chastain soils							4	3
Eustis loamy sand:								
Gently sloping dark surface phase	200	350	20	45	30	50	5	3
Strongly sloping dark surface phase							6	4
Eutaw-Vaiden clays:								
Level phases							3	2
Very gently sloping phases							3	2
Houlka clay		400		40	30	50	[illegible]	2
Independence loamy fine sand	200	300	20	40	30	60	4	3
Iuka fine sandy loam	400	600	45	85	50	100	2	1
Iuka very fine sandy loam, local alluvium phase	400	600	45	85	50	100	[illegible]	1
Johnston loam			40	80	50	90	3	2
Lauderdale stony fine sandy loam:								
Eroded gently sloping phase								
Sloping to moderately steep phases								
Lauderdale-Boswell complex:								
Eroded gently sloping phases								
Eroded sloping phases								
Strongly sloping and moderately steep phases								
Mantachie soils			40	75	40	80	3	2
Mantachie very fine sandy loam, local alluvium phase								
Mayhew fine sandy clay loam:								
Nearly level phase							4	3
Very gently sloping phase							4	3
Myatt very fine sandy loam							4	3
Nacogdoches loam:								
Eroded very gently sloping phase	350	550	30	55	45	75	4	3
Eroded gently sloping phase	300	500	25	50	40	70	4	3
Eroded sloping phase	250	400			30	50	5	3
Strongly sloping phase								
Eroded strongly sloping phase								
Eroded moderately steep phase								
Nacogdoches sandy clay loam:								
Severely eroded very gently sloping phase	275	450	20	45	40	65	4	3
Severely eroded gently sloping phase	275	450	20	45	40	65	4	3
Severely eroded sloping phase	250	400			30	50	5	3
Severely eroded strongly sloping phase								
Ochlockonee fine sandy loam, local alluvium phase	450	700	45	85	50	100	2	1
Ora and Dulac soils:								
Eroded very gently sloping phases	300	500	25	45	40	65	4	3
Very gently sloping phases	300	500	25	45	40	65	4	3
Gently sloping phases	250	400	20	45	40	60	4	3
Eroded gently sloping phases	250	400	20	45	30	60	4	3
Severely eroded gently sloping phases	150	300			30	50	5	3
Ora fine sandy loam, eroded sloping phase	150	300			30	50	5	3

See footnote at end of table.

TABLE 4.—*Estimated average acre yields of the principal crops under two levels of management*—Continued

Yields in columns A are obtained under common levels of management; yields in columns B are obtained under improved management; absence of yield indicates crop is poorly suited to the soil and is seldom grown on it]

Soil	Cotton A	Cotton B	Corn A	Corn B	Oats A	Oats B	Permanent pasture A	Permanent pasture B
	Lb.	*Lb.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Acres per animal unit* [1]	*Acres per animal unit* [1]
Prentiss very fine sandy loam:								
Very gently sloping phase	350	500	35	60	40	65	4	3
Level phase	350	500	35	60	40	65	4	3
Eroded very gently sloping phase	350	500	35	60	40	65	4	3
Eroded gently sloping phase	300	450	30	50	40	60	4	3
Eroded sloping phase							4	3
Ruston fine sandy loam:								
Eroded very gently sloping phase	350	550	30	50	40	70	4	3
Very gently sloping phase	350	550	30	50	40	70	4	3
Severely eroded very gently sloping phase	300	500	25	45	35	65	4	3
Gently sloping phase	300	500	25	45	35	65	4	3
Eroded gently sloping phase	300	500	25	45	35	65	4	3
Severely eroded gently sloping phase	300	500	25	45	35	65	4	3
Sloping phase	250	350	20	40	30	60	5	3.5
Eroded sloping phase	250	350	20	40	30	60	5	3.5
Severely eroded sloping phase	250	350	20	40	30	60	5	3.5
Strongly sloping phase							4	3
Eroded strongly sloping phase							4	3
Severely eroded strongly sloping phase							5	3.5
Moderately steep phase							5	3.5
Eroded moderately steep phase							5	3
Severely eroded moderately steep phase							5	3
Savannah and Franklinton soils:								
Eroded very gently sloping phases	300	500	25	45	40	65	4	3
Very gently sloping phases	300	500	25	45	40	65	4	3
Gently sloping phases	250	400	20	45	40	60	4	3
Eroded gently sloping phases	250	400	20	45	40	60	4	3
Sawyer fine sandy loam:								
Very gently sloping phase	270	450	25	50	40	65	4	3
Eroded very gently sloping phase	270	450	25	50	40	65	4	3
Level phase	270	450	25	50	40	65	4	3
Eroded gently sloping phase	200	400	20	40	30	60	4	3
Eroded sloping phase	150	300			25	50	4	3
Shubuta fine sandy loam:								
Eroded very gently sloping phase	270	450	25	50	40	65	4	3
Very gently sloping phase	270	450	25	50	40	65	4	3
Gently sloping phase	200	400	20	40	30	60	4	3
Eroded gently sloping phase	200	400	20	40	30	60	4	3
Sloping phase	150	300			25	50	5	4
Eroded sloping phase	150	300			25	50	5	4
Strongly sloping phase								
Eroded strongly sloping phase								
Shubuta clay loam:								
Severely eroded very gently sloping phase	150	300			25	50	5	4
Severely eroded gently sloping phase	150	300			25	50	5	4
Severely eroded sloping phase	150	300			25	50	5	4
Severely eroded strongly sloping phase								
Shubuta and Cuthbert soils, moderately steep phases								
Stough very fine sandy loam:								
Level phase			30	55	40	60	4	3
Very gently sloping phase			30	55	40	60	4	3
Sumter clay, eroded gently sloping phase	200	400			30	60	4	3
Tilden very fine sandy loam:								
Eroded very gently sloping phase	400	600	40	70	45	80	3	2
Very gently sloping phase	400	600	40	70	45	80	3	2
Level phase	400	600	40	70	45	80	3	2
Gently sloping phase	350	600	35	65	40	70	3	2
Eroded gently sloping phase	350	500	35	65	40	70	3	2
Eroded sloping phase							4	3
Una clay, local alluvium phase							4	3
Vaiden-Eutaw clays:								
Very gently sloping phases							3	2
Eroded gently sloping phases							3	2
Eroded sloping phases							3	2

[1] Average number of acres required to furnish adequate grazing, without injury to the pasture, for 1 animal unit for a grazing season of 221 days. An animal unit is equivalent to 1 cow, steer, or mule; 5 hogs; or 7 sheep.

Conservation Engineering

The following subsections on drainage, farm ponds, and irrigation will be helpful to both farmers and farm engineers in their efforts to use to the best advantage the moisture in Newton County. Consult table 5 for more detailed engineering information.

Drainage

Some drainage has been done in Newton County, and more and better drainage is needed. There are three organized drainage districts in the county. The Tuscolameta Drainage District, organized in 1922, has 19¾ miles of canal. Newton County Drainage Districts 1 and 3 were organized in 1925 and 1927, respectively. District 1 has 9½ miles of canal, and District 3 has 15¾ miles. The canals for all three districts lack suitable outlets; consequently, they soon fill with sand, silt, and debris. No organized maintenance program is now operating.

Stream channels need improvement in the western third of the county, which is drained by Tuscolameta and Conehatta Creeks, both tributaries of the Pearl River. Chunky Creek and its tributaries, which drain the eastern two-thirds of the county, all need improvement of channels.

The bottom lands along the streams just mentioned, as well as some soils on low terraces, normally are flooded during periods of excessive rainfall (fig. 9). The bottoms are relatively narrow, except along Chunky Creek, and internal and surface drainage of the soils is a problem. The soils are basically productive and would provide good yields if adequately drained. At present, they are used chiefly for trees and a few row crops.

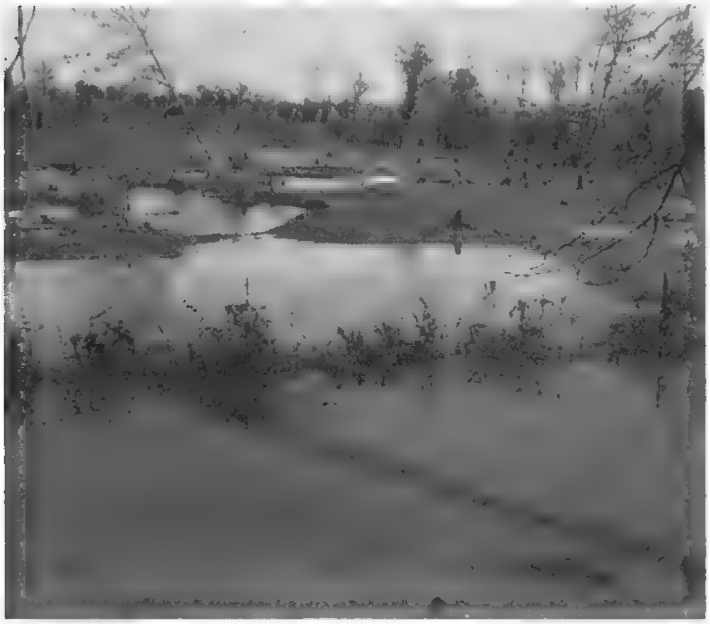

***Figure 9.*—Bottom-land pasture 2 days after a heavy rain. The need for adequate drainage is evident.**

In improving drainage, several types of ditches may be used to good advantage. The various kinds are discussed as follows:

1. SECONDARY DRAINAGE DITCHES: These ditches are usually cut with a dragline and are trapezoidal in shape. They are designed for a drainage coefficient of 77 cubic feet per second per square mile, have a minimum depth of 3 feet, and have 1½:1 side slopes. Design velocities should not exceed 3 feet per second. It is usually necessary to excavate these ditches from the outlet up to a point where the natural ground has a slope of 1 percent or greater. Ditches 3 to 4 feet deep aid greatly in draining the soil profile and are usually large enough to carry off excess surface water.

2. V-TYPE AND W-TYPE DITCHES: These ditches, 12 to 24 inches deep, serve as field drains to carry terrace and row water to the secondary drains. They are usually constructed with farm equipment and are 10 to 30 feet wide. Where the slope of these ditches is 2 percent or greater, channels and side slopes should be planted to perennial grasses to prevent scour and erosion. Vegetated meadow outlets and water-disposal areas often are used to carry terrace water down the slope to a disposal ditch.

3. TERRACES: It is a common practice in the county to terrace cultivated slopes of 2 to 8 percent. Terraces should be located where erosion has started or is likely to occur. They should drain from the ridges to the draws. Each natural draw in the field should be used as an outlet for terraces. Terraces can be constructed with regular farm equipment at nominal cost. The following widths and heights are recommended in keeping with the topography and tillage equipment used:

   Slopes of 5 percent or less: 14 feet wide and 14 inches settled height, and 8 square feet in cross-section area.

   Slopes of more than 5 percent: 12 feet wide and 14 inches settled height, and 6 square feet in cross-section area.

   Terracing is not suitable on slopes above 8 percent.

4. DIVERSION DITCHES: These ditches are constructed crosswise to the slope for the purpose of intercepting surface runoff and preventing damage to land below. In many places they are used at the foot of long slopes, on the upper side of a cultivated field, to protect the field from uncontrolled runoff from slopes above and to cut off ground water from seeps and springs. Diversion ditches should be designed to suit each individual site and should have capacity to take care of the severest storm likely to occur in a 10-year period. To prevent erosion where velocities exceed 3 feet per second, perennial vegetation is required on the ditch bottom and side slopes.

5. TILE DRAINS: At present, tile drainage is not practical in Newton County. Nevertheless, several soils of the bottom lands, such as the Johnston, Iuka, and Mantachie, will respond well to this type of drainage. To be effective, tile drains must be properly designed to suit the area and must have an adequate outlet. Tile lines should intercept all seepage water from adjoining hills and have necessary spacing and depth. In general, tile lines should be placed 3 feet to 4 feet deep and from 100 feet to 150 feet apart. Where no surface water is to be admitted to the tile line, a tile size that will remove half an inch of water in 24 hours is satisfactory for general farm crops.

TABLE 5.—*Properties of soils in Newton*

[Properties are estimated on the basis of a profile considered typical for the series. The letter symbols in parentheses after the series name the described profile, in general, is the surface layer of the severely eroded phase or phases. See

Soil series and map symbols	Depth [1]	Dominant texture	Permeability	Suitability as road subgrade	Shrink-swell potential	pH
	Inches		*Inches per hour*			
Bibb (Ba)	0–10	Fine sandy loam	0. 80–2. 50	Poor	Low	5. 1–5. 5
	10–36	Sandy clay loam	. 20– . 80	Poor	Moderate	5. 1–5. 5
Binnsville (BbB2, BbC3)	0–8	Clay	. 05– . 20	Unsuitable	High	7. 9–8. 4
	8–60	Clay	(3)	Unsuitable	Very high	(4)
Boswell (BcB2, BcC2, BcD2, BcE2, BcF, BdC3, BdD3, LbC2, LbD2, LbE).	0–6	Fine sandy loam	. 80–2. 50	Good	Low	5. 1–5. 5
	6–20	Clay	. 20– . 80	Poor	High	5. 1–5. 5
	20–56	Clay	. 05– . 20	Poor	High	5. 1–5. 5
Cahaba (CaB2, CaA, CaC2)	0–13	Very fine sandy loam	2. 50–5. 00	Good	Low	5. 1–5. 5
	13–27	Sandy clay loam	2. 50–5. 00	Good	Low	5. 1–5. 5
	27–50	Sandy loam	5. 00–10. 0	Good	Low	5. 1–5. 5
Catalpa (Cb)	0–28	Clay	. 05– . 20	Unsuitable	Very high	7. 4–7. 8
	28–48	Silty clay	(3)	Unsuitable	Very high	7. 9–8. 4
Chastain (Cc)	0–8	Fine sandy loam	. 80–2. 50	Poor	Low	5. 1–5. 5
	8–16	Sandy clay loam	. 20– . 80	Poor	Moderate	5. 1–5. 5
	16–36	Clay	. 05– . 20	Unsuitable	High	5. 1–5. 5
Cuthbert (SgF)	0–8	Fine sandy loam	. 80–2. 50	Good	Low	5. 1–5. 5
	8-14	Clay	. 20– . 80	Poor	High	5. 1–5. 5
	14-40	Thinly bedded sands and clays.	. 05– . 20	Poor	High	5. 1 5. 5
Dulac (OcB2, OcB, OcC, OcC2, OcC3).	0 6	Silt loam	. 80 -2. 50	Good	Low	5. 1–5. 5
	6–23	Silty clay loam	. 80–2. 50	Good	Low	5. 1–5. 5
	23–62	Fine sandy loam	. 05 - . 20	Fair	Low to moderate	5. 1–5. 5
Eustis (EaC, EaE)	0–7	Loamy sand	5. 00–10. 0	Fair	Low	5. 1–5. 5
	7–80	Loamy sand to loamy fine sand.	5. 00–10. 0	Fair	Low	5. 1–5. 5
Eutaw (EbA, EbB, VaB, VaC2, VaD2).	0–5	Clay	. 05– . 20	Unsuitable	High	5. 6–6. 0
	5–44	Clay	(3)	Unsuitable	Very high	5. 6–6. 0
	44–60	Clay	(3)	Unsuitable	Very high	(4)
Franklinton (SaB2, SaB, SaC, SaC2).	0–7	Silt loam	. 80–2. 50	Good	Low	5. 1–5. 5
	7–19	Silty clay loam	. 80–2. 50	Good	Low	5. 1–5. 5
	19–75	Fine sandy loam	. 05– . 20	Fair	Low to moderate	5. 1–5. 5
Houlka (Ha)	0–24	Clay	. 05– . 20	Unsuitable	Very high	6. 1–6. 5
	24–40	Clay	(3)	Unsuitable	Very high	6. 1–6. 5
Independence (Ia)	0–36	Loamy fine sand	5. 00–10. 0	Good	Low	5. 1–5. 5
	36–60	Fine sand	(5)	Good	Low	5. 1–5. 5
Iuka (Ic, Ib)	0–30	Fine sandy loam	2. 50–5. 00	Good	Low	5. 1–5. 5
	30–40	Sandy loam	. 80–2. 50	Fair	Low	5. 1–5. 5
Johnston (Ja)	0–25	Loam	. 80–2. 50	Poor	Moderate	5. 1–5. 5
	25–50	Sandy clay	. 50– . 20	Poor	High	5. 1–5. 5
Lauderdale (LaC2, LaE, LbC2, LbD2, LbE).	0–6	Stony fine sandy loam	. 20– . 80	Fair	Low	5. 1–5. 5
	6–30	Sandy clay	. 05– . 20	Unsuitable	High	5. 1–5. 5
	30–60	Horizontal beds of cemented sandstone.	(3)	Unsuitable	High	5. 1–5. 5
Mantachie (Ma, Mb)	0–22	Fine sandy loam	. 08–2. 50	Fair	Low	5. 1–5. 5
	22–40	Very fine sandy clay loam.	. 80–2. 50	Poor	Moderate	5. 1–5. 5

County, Miss., important to engineering

can be used to identify the soils of that series on the detailed soil map. For series containing soils subject to erosion, the second layer of the section, Soils of Newton County, for detailed descriptions of the soils shown on the soil map]

Available moisture capacity	Structure	Depth to water table [2]	Suitability for farm ponds	Soil drainage	Remarks
Inches per foot		*Feet*			
1.60 1.50	Granular Structureless	0	Fair	Poor	Surface water is a problem because the water table is high.
1.60 .50	Subangular blocky Structureless	10+	Poor	Poor	
1.50 1.50 .70	Granular and subangular blocky. Angular blocky Angular blocky	10+	Good	Moderately good	Mapping units LbC2, LbD2, and LbE are complexes of Lauderdale and Boswell soils.
1.50 1.70 1.50	Granular Subangular blocky Subangular blocky and granular.	10+	Fair to good	Good	
1.60 1.25	Subangular blocky to structureless. Structureless	1½–2	Fair	Moderately good	Clay prevents free movement of water in the soils.
1.60 1.50 1.20	Granular Structureless Structureless	0	Fair	Poor	Surface water is a problem because the water table is high.
1.50 1.50 .70	Granular Subangular blocky Subangular blocky	10+	Good	Moderately good to good	Mapped only in an undifferentiated unit with Shubuta soils.
1.50 1.70 .70	Granular Subangular blocky Subangular blocky	2½–3½+	Good	Moderately good to good	Dulac soils mapped only as undifferentiated units with Ora soils; in Dulac soils fragipan between depths of 23 and 62 inches causes a perched water table.
.70 .70	Granular Granular to structureless	10+	Poor	Somewhat excessive	Good source of sand.
1.60 1.25 1.25	Subangular blocky Subangular blocky Subangular blocky	0–3	Fair	Poor to somewhat poor	Eutaw soils mapped only in undifferentiated units with Vaiden clays; surface water is a problem in Eutaw soils because they are fine-textured clays.
1.50 1.70 .70	Granular Subangular blocky Subangular blocky	2½–3½+	Good	Somewhat poor to moderately good.	Franklinton soils mapped only in undifferentiated units with Savannah soils; fragipan in Franklinton soils at depths between 11 and 55 inches causes a perched water table.
1.60 1.25	Subangular blocky to structureless. Structureless	½–1	Fair	Somewhat poor	Clays prevent free internal movement of water.
.80 .60	Granular Granular	10+	Poor	Somewhat excessive	Good source of sand.
1.60 1.50	Granular to structureless Structureless	1½–4+	Poor	Moderately good	Surface drainage is a minor problem.
2.00 1.50	Granular to structureless Structureless	0	Fair	Poor	Surface drainage is a problem because the water table is high.
1.50 1.00 .50	Granular Subangular blocky Structureless	10+	Poor	Good to excessive	Mapping units LbC2, LbD2, and LbE are complexes of Lauderdale and Boswell soils.
1.60 1.40	Granular to structureless Structureless	½–1½	Poor	Somewhat poor	Surface drainage is a problem in some areas.

See footnotes at end of table.

TABLE 5.—*Properties of soils in Newton County*

Soil series and map symbols	Depth [1]	Dominant texture	Permeability	Suitability as road subgrade	Shrink-swell potential	pH
	Inches		*Inches per hour*			
Mayhew (McA, McB)	0–7	Sandy clay loam	0. 02– . 80	Unsuitable	Moderate	5. 1–5. 5
	7–48	Clay or sandy clay	. 05– . 20	Unsuitable	High	5. 1–5. 5
Myatt (Md)	0–16	Very fine sandy loam	. 80–2. 50	Poor	Low	5. 1–5. 5
	16–50	Sandy clay	. 05– . 20	Unsuitable	Moderate	5. 1–5. 5
Nacogdoches (NaB2, NaC2, NaD2, NaE, NaE2, NaF2, NbB3, NbC3, NbD3, NbE3).	0–6	Loam	. 80–2. 50	Fair	Low	5. 1–5. 5
	6–100	Clay and sandy clay	. 20– . 80	Poor	Moderate	5. 1–5. 5
Ochlockonee (Oa)	0–36	Fine sandy loam	2. 50–5. 00	Good	Low	5. 1–5. 5
	36–50	Fine sandy clay loam	. 80–2. 50	Fair	Low	5. 1–5. 5
Ora (OcB2, OcB, OcC, OcC2, OcC3, ObD2).	0–10	Very fine sandy loam	. 80–2. 50	Good	Low	5. 1–5. 5
	10–23	Sandy clay loam	. 80–2. 50	Good	Low	5. 1–5. 5
	23–75	Fine sandy loam	. 05– . 20	Fair	Low to moderate	5. 1–5. 5
Prentiss (PaB, PaA, PaB2, PaC2, PaD2).	0–11	Very fine sandy loam	. 80–2. 50	Fair	Low	5. 1–5. 5
	11–29	Sandy clay loam	. 80–2. 50	Fair	Low	5. 1–5. 5
	29–70	Fine sandy loam	. 05– . 20	Poor	Low	5. 1–5. 5
Ruston (RaB, RaB2, RaB3, RaC, RaC2, RaC3, RaD, RaD2, RaD3, RaE, RaE2, RaE3, RaF, RaF2, RaF3.	0–10	Fine sandy loam	2. 50–5. 00	Good	Low	5. 1–5. 5
	10–32	Sandy clay loam	2. 50–5. 00	Good	Low	5. 1–5. 5
	32–50	Fine sandy loam	2. 50–5. 00	Good	Low	5. 1–5. 5
Savannah (SaB2, SaB, SaC, SaC2	0–6	Fine sandy loam	. 80–2. 50	Good	Low	5. 1–5. 5
	6–24	Sandy clay loam	. 80–2. 50	Good	Low	5. 1–5. 5
	24–78	Fine sandy loam	. 50– . 20	Fair	Low to moderate	5. 1–5. 5
Sawyer (SbB, SbB2, SbA, SbC2, SbD2).	0–10	Fine sandy loam	. 80–2. 50	Good	Low	5. 1–5. 5
	10–26	Sandy clay	. 20– . 80	Poor	High	5. 1–5. 5
	26–56	Sandy clay loam	. 20– . 80	Poor	High	5. 1–5. 5
Shubuta (SdB2, SdB, SdC, SdC2, SdD, SdD2, SdE, SdE2, ScB3, ScC3, ScD3, ScE3, SgF).	0–9	Fine sandy loam	. 80–2. 50	Good	Low	5. 1–5. 5
	9–28	Sandy clay	. 20– . 80	Poor	High	5. 1–5. 5
	28–50	Fine sandy clay loam	. 05– . 20	Poor	High	5. 1–5. 5
Stough (ShA, ShB)	0–11	Very fine sandy loam	. 80–2. 50	Fair	Low	5. 1–5. 5
	11–23	Sandy clay loam	. 80–2. 50	Fair	Low	5. 1–5. 5
	23–38	Fine sandy loam	. 05– . 20	Poor	Low to moderate	5. 1–5. 5
	38–58	Sandy clay	. 05– . 20	Poor	High	5. 1–5. 5
Sumter (SkC2)	0–11	Clay	. 05– . 20	Unsuitable	High	7. 9–8. 4
	11–48	Selma chalk	(3)	Unsuitable	Very high	(4)
Tilden (TaB2, TaB, TaA, TaC, TaC2, TaD2).	0–6	Very fine sandy loam	. 80–2. 50	Fair	Low	5. 1–5. 5
	6–24	Sandy clay loam	. 80–2. 50	Fair	Low	5. 1–5. 5
	24–84	Fine sandy loam	. 05– . 20	Poor	Low	5. 1–5. 5
Una (Ua)	0–8	Clay	. 05– . 20	Unsuitable	Very high	5. 6–6. 0
	8–50	Clay	(3)	Unsuitable	Very high	5. 6–6. 0
Vaiden (VaB, VaC2, VaD2, EbA, EbB).	0–10	Clay	. 05– . 20	Unsuitable	High	5. 6–6. 0
	10–45	Clay	(3)	Unsuitable	Very high	5. 6–6. 0
	45–70	Clay	(3)	Unsuitable	Very high	(4)

[1] The profiles are divided into layers of engineering significance.

[2] Minimum depth to water table during wettest periods.

Miss., important to engineering—Continued

Available moisture capacity	Structure	Depth to water table [2]	Suitability for farm ponds	Soil drainage	Remarks
Inches per foot		*Feet*			
1. 60 1. 25	Subangular blocky Subangular blocky	0–½	Good	Poor	Surface water is a problem because the water table is high.
1. 60 1. 20	Granular to subangular blocky. Subangular blocky	0	Fair to good	Poor	Drainage is a problem because the water table is high; in some areas the soil has a fragipan of sandy clay loam between depths of 28 and 38 inches.
1. 50 1. 70	Subangular blocky Subangular blocky	10+	Good	Good	
1. 60 1. 50	Granular to structureless Structureless	1½–4+	Poor	Good	
1. 50 . 70 . 70	Granular to subangular blocky. Subangular blocky Subangular blocky	2½–3½+	Good	Moderately good to good	All Ora soils but ObD2 are mapped as undifferentiated units with Dulac soils; Ora soils have a fragipan at depths between 23 and 53 inches that causes a perched water table.
1. 50 1. 70 . 70	Granular Subangular blocky Angular blocky to subangular blocky.	2½+	Fair to good	Moderately good	A fragipan at depths between 29 and 56 inches causes a perched water table.
1. 50 1. 70 1. 50	Granular Subangular blocky Subangular blocky	10+	Fair to good	Good	
1. 50 1. 70 . 70	Granular Subangular blocky Subangular blocky	2½–3½+	Good	Somewhat poor to moderately good.	Savannah soils mapped only as undifferentiated units with Franklinton soils; Savannah soils have a fragipan at depths between 24 and 58 inches that causes a perched water table.
1. 50 1. 50 . 70	Granular to subangular blocky. Subangular blocky Subangular blocky	4+	Good	Somewhat poor	Surface water is a problem in some places because the subsoil is clayey.
1. 50 1. 50 . 70	Granular to subangular blocky. Subangular blocky Subangular blocky	10+	Good	Moderately good	Mapping unit SgF is an undifferentiated unit of Shubuta and Cuthbert soils.
1. 50 1. 50 . 70 . 70	Granular to subangular blocky. Subangular blocky Subangular blocky Subangular blocky	½–1	Fair to good	Somewhat poor	A high water table and slow permeability make drainage a problem; a fragipan is at depths between 23 and 38 inches.
1. 60 . 50	Subangular blocky Subangular blocky	10+	Poor	Somewhat poor	
1. 50 1. 70 . 70	Granular Subangular blocky Subangular blocky	2½+	Fair to good	Moderately good	Fragipan between depths of 24 and 53 inches causes a perched water table.
1. 25 1. 25	Subangular blocky Structureless	0	Fair	Poor	The clay texture prevents free movement of water in the soils.
1. 60 1. 25 1. 25	Subangular blocky Subangular blocky Subangular blocky	0–3	Fair	Somewhat poor to poor	Vaiden soils mapped only in undifferentiated units with Eutaw clays; surface water is a problem because of the clayey texture of the profile.

[3] Less than 0.05 inch per hour. [4] pH of 9.1 or more. [5] More than 10.0 inches per hour.

Farm ponds

Farm ponds furnish most of the year-round water for livestock. These ponds are constructed either by building earth fills across small valleys or by excavating a pit on nearly level land. Care must be exercised in selecting the site for construction.

In determining the suitability of soil materials for constructing farm ponds, the texture and compactability of the soils and the porosity of the underlying material must be considered. The soil textures considered best, provided the soil is uniformly graded or mixed, are:

1. Sandy clay loams, clay loams, and silty clay loams.
2. Fine-textured sandy loams and loams.
3. Sandy clays and coarse-textured clays.

Farm ponds are sometimes difficult to construct on soils having a fine clay texture. There is only a short time during which the soils are not too dry or too wet for construction. Soils having coarse textures, for example, loamy sands or sands, are poor sites for farm ponds. Soil material consisting of textural particles uniform in size is not so desirable for pond construction as soil material with uniformly distributed, different-sized particles. These varied-size particles allow only a minimum amount of pore space in the soil.

Earth dams are usually from 12 to 20 feet high and are on watersheds not exceeding 60 acres. Dams of this height stand up well with 2:1 side slopes. At most sites a cutoff trench along the center line of the dam is required to prevent seepage under the ground. Earth dams and spillways should be vegetated with perennial grasses as soon after construction as practical.

Pit, or "dugout," ponds are constructed by excavating a reservoir below the ground level. These reservoirs should be a minimum of 6 feet deep and have side slopes not steeper than 1½:1. Storage capacity should be large enough to fulfill the intended purpose.

Ponds for livestock should have sufficient storage capacity to meet the needs of animals and to compensate for losses through seepage and evaporation. The following tabulation indicates approximately the water storage requirements for ponds used to provide water for livestock.

Number of animal units:	*Acre feet of water*
25	1. 1
50	2. 2
75	3. 3
100	4. 4

In the foregoing tabulation an animal unit is considered to be a cow, steer, or horse.

Farm ponds are a source of irrigation water on a number of farms. If used for this purpose, they should be located close enough to the area to be irrigated to permit water to be pumped economically. Storage capacity should be sufficient to meet the demands for irrigation during the longest probable drought period. Storage capacity of ponds may be estimated by this formula:

Storage capacity = Surface area $\times$ 0.4 $\times$ minimum depth.

Most farm ponds are suitable for fish production if they are properly managed. Bass and bream are the only species recommended for stocking at this time.

Irrigation

Although the annual average rainfall of Newton County is approximately 53 inches, periods when crops would respond to irrigation are common during much of the growing season. At the present, however, only a few farmers in the county have practical irrigation. These systems are on relatively small areas of pasture and grain crops. The farmers' lack of interest in irrigation results primarily from lack of an adequate water supply and the low value per acre of the crops commonly grown.

Almost all the soils are suitable for sprinkler irrigation. The intake rates vary from 0.25 inch per hour to 0.8 inch per hour, and the moisture-holding capacity varies from 0.5 inch per foot to 2.0 inch per foot at root zone depth. Most of the soils on the bottom lands can be irrigated by either the furrow or contour level method, provided land preparation is adequate prior to irrigation. Good crop responses and increased yields on all soils can be expected from supplemental irrigation.

Highway Construction

In table 5, soil properties significant in road building are listed along with properties important in other kinds of construction. In column 5 of this table, the major layers of each soil series are rated for suitability for road subgrade.

The materials that are rated good as subgrade have a relatively high bearing capacity when properly compacted, and their surface drainage is adequate; hence, they will provide a good foundation for the base and surface courses of the pavement. Generally, the coarse-textured soils are rated only fair as subgrade material unless they are uniformly mixed with finer textured materials before they are put in place. Soils high in organic matter are rated as poor, regardless of texture. The ratings in column 5 are for soils in their undisturbed condition; hence, the depth to the water table and soil drainage are considered. A higher rating may be given some of the soil materials if the drainage condition is improved by installation of surface drains or underdrains, or if the soil materials are used in the upper portion of road fills.

Shrink-swell potential ratings, *low, moderate, high,* and *very high,* are evaluations of the differences in dry and saturated volumes of a given amount of the material. In general, sandy material has a low shrink-swell potential, whereas clayey material has a high potential, although this varies somewhat with the kind of clay. Material with a "high" or "very high" potential, as that of the Eutaw soil, is not satisfactory as subgrade material; it is not stable because there is great change in volume with change in moisture status. For about this same reason, material with a "high" or "very high" shrink-swell potential is not satisfactory for dams.

Soils subject to overflow require that roadways on them be built so the pavement is a few feet above normal flood level. Soils commonly subject to overflow in Newton County are those of the Bibb, Catalpa, Chastain, Houlka, Iuka, Johnston, Mantachie, Ochlockonee, and Una series.

The ratings for soil drainage, in the next to last column of table 5, are also important in engineering. In building roads it is particularly necessary to know the location of poorly drained soils. Seepage along the backslope of a cut in these areas may cause slumping or sliding of the overlying material. A perched water table beneath the road pavement may result in freezing and thawing in the saturated foundation material. This, in turn, causes differential volume changes and differences in bearing capacity. Poorly drained areas should be inspected carefully to determine the need for interceptor drains and underdrains.

Poorly drained soils, especially if they are high in organic matter, are of limited value for most types of construction. They should be bypassed when building roads. If cuts are made in poorly drained areas, suitable fill from another source should be used for embankments and for foundations that are below gradeline in cuts.

Erosion of ditches and road cuts is very active in the sandier soils. This material is moved from place easily by free water, and banks cave easily when undermined. The soils in which this kind of erosion is greatest are of the Eustis, Independence, Ruston, Cahaba, Ora, Prentiss, Savannah, and Tilden series. The first four listed are the most subject to this kind of erosion. The sandy soils of the bottom lands are not listed, as ditches are rarely cut to a significant depth in them.

Environment and Classification of the Soils

Soil is the product of climate, living organisms, parent material, topography, and time. The characteristics of a soil depend on the way these five factors interact during the formation of the soil. The relative importance of each factor differs from place to place. In Newton County two factors of soil formation—climate and living organisms—are fairly uniform; consequently, they do not account for broad differences among the soils. The three remaining factors—parent material, topography, and time—vary a great deal from place to place and, therefore, account for the different kinds of soils in the county.

CLIMATE

The climate of Newton County is temperate and continental. Winters are mild but have short cold spells. Summers are rather hot, though temperatures above 100° F. are unusual. Normal monthly, seasonal, and annual temperatures and precipitation are given in table 6. This table was compiled from records at the weather station at Forest, in neighboring Scott County. Data from the station at Hickory in Newton County were not used, because the station had not been established long. For the purpose of giving a general idea of the range in temperature and precipitation, the data from the station at Forest are satisfactory, as the station at Forest is at an elevation only 160 feet greater than the station at Hickory.

The average rainfall is nearly 54 inches a year. Severe droughts are not common, but there are short dry periods in summer and in fall. The average snowfall is about 2 inches, though there are some years without snow. Figures on frost-free days were not available at the Forest station, but at Meridian, in Lauderdale County, the average frost-free period is 234 days. The average date of the last frost in spring is March 18, and the first in fall, November 7. The latest killing frost ever recorded came on April 25, and the earliest in fall, October 8.

TABLE 6.—*Temperature and precipitation at Forest, Scott County, Mississippi*

[Elevation, 485 feet]

Month	Temperature [1]			Precipitation [2]			
	Average	Absolute maximum	Absolute minimum	Average	Driest year (1952)	Wettest year (1940)	Average snowfall
	° F.	° F.	° F.	Inches	Inches	Inches	Inches
December	48. 0	84	11	5. 14	5. 95	8. 43	0. 1
January	47. 6	88	−5	4. 97	4. 04	3. 69	1. 6
February	49. 6	83	1	5. 07	3. 61	4. 92	. 1
Winter	48. 4	88	−5	15. 18	13. 60	17. 04	1. 8
March	57. 1	90	16	5. 30	3. 50	3. 89	(3)
April	63. 9	91	26	4. 82	3. 67	8. 64	0
May	71. 0	97	39	4. 62	4. 52	3. 64	0
Spring	64. 0	97	16	14. 74	11. 69	16. 17	(3)
June	77. 9	105	47	4. 25	2. 18	5. 76	0
July	79. 9	102	52	5. 54	2. 26	12. 63	0
August	79. 6	104	48	4. 89	3. 47	3. 47	0
Summer	79. 1	105	47	14. 68	7. 91	21. 86	0
September	75. 2	101	40	2. 95	1. 86	3. 45	0
October	63. 9	94	26	2. 46	. 00	. 68	0
November	54. 3	91	13	3. 42	3. 42	5. 75	0
Fall	64. 5	101	13	8. 83	5. 28	9. 88	0
Year	64. 0	105	−5	53. 43	38. 48	64. 95	1. 8

[1] Average temperature based on a 68-year record, through 1955; highest temperature based on a 16-year record, and lowest temperature based on a 17-year record, through 1952.

[2] Average precipitation based on a 71-year record, through 1955; wettest and driest years based on an 18-year record, in the period 1934–1955; snowfall based on an 18-year record, through 1952.

[3] Trace.

LIVING ORGANISMS

Before cultivation, the native vegetation is the most important in the complex of living organisms that affect soil development. The activities of animals are seemingly of minor importance.

The first settlers found longleaf and shortleaf pines, white, red, post, and blackjack oaks, hickory, gum, poplar, persimmon, and dogwood on the sandy uplands. The bottoms supported a growth of white, red, and water oaks, hickory, elm, ash, willow, and hackberry trees. A dense growth of briers and vines grew in both of these areas. The prairie section was covered with grasses, shortleaf pine, and blackjack, post, and white oaks.

With the development of agriculture in Newton County, man has become important to the future direction and rate of development of the soils. The clearing of the forest, the cultivation of the soils, the introduction of new species of plants, and the artificial improvement of natural

drainage will be reflected in the direction and rates of soil changes in the future. Few results of these changes can be seen now. Some probably will not be evident for many centuries. The complex of living organisms affecting soils in Newton County has been drastically changed, however, as a result of man's activity.

PARENT MATERIALS

The four outcropping formations of Newton County are all Eocene in age and are underlain by alternating beds of sand and clay (*2*).[1] The Wilcox formation consists of irregularly bedded fine to coarse sand, more or less lignitic clay, and lignite. The bauxite-bearing Fearn Springs sand members are at the base of this formation.

The materials in the Tallahatta (Buhrstone) formation are quartzite, claystone, sandstone, and sand, but the claystone predominates.

Three distinct beds of material comprise the Lisbon formation. The Winona, a bed of red sand, is the bottom layer. The next layer, the Kosciusko, is a bed of white and iron-stained sands that is solidified into hard sandstone in some places. At the top is the Wautubbee layer, a glauconitic marl containing beds of laminated red, white, pink, and yellow sands (*4*, *5*).

The Jackson formation is composed of soft limestone, quartz sand, and glauconitic clays (*3*).

TOPOGRAPHY

The major part of Newton County is an upland into which the streams have cut their valleys. The surface is that of a maturely dissected upland. The major streams have fairly broad valley flats bordered by one or more low terraces. Chunky, Tallahatta, Oakahatta, and Potterchitto Creeks, which drain the northeastern and central parts of the county, follow a southeasterly course and are tributaries to the Chickasawhay River. Conehatta and Tuscolameta Creeks drain northwestward to the Pearl River.

The entire county lies within the Gulf Coastal Plain physiographic province and within the topographic divisions known as North Central Hills and Jackson Prairie (*3*).

TIME

The soils of Newton County belong in three different age groups. The youngest soils, those on the first bottoms, are still receiving alluvium from the flooding streams and have no profile development. The somewhat older soils of the stream terraces have a weak profile development.

On the outcropping formations of the uplands are the oldest soils in the county. These soils have profiles in which the horizons are well defined but not strongly developed.

Classification of Soils by Higher Categories

Soils are placed in narrow classes so that knowledge of their behavior within farms or counties can be organized and applied. They are placed in broad classes for study and comparison of larger areas, such as continents. In the comprehensive system of soil classification followed in the United States, the soils are placed in six categories, one above the other. Beginning at the top, the six categories are the order, suborder, great soil group, family, series, and type (*6*).

In the highest category, the soils of the whole country are placed in three orders—zonal, intrazonal, and azonal. Thousands of soil types are recognized in the lowest category. The suborder and family categories have never been fully developed and thus are seldom used. Attention has largely been given to the classification of soils into soil types and series within the counties or comparable areas and to the subsequent grouping of series into great soil groups. The soil series, soil type, and soil phase are discussed in another section, Soils of Newton County. Table 7 lists the soil series of the county and gives for each the parent material, slope, degree of profile development, and the great soil group to which the series belongs.

Red-Yellow Podzolic soils

The Red-Yellow Podzolic great soil group contains soils that are much alike in morphology but have different colors in the subsoil. The soils are discussed in two groups. In the first are the soils having a red subsoil, and in the second are those with a yellow subsoil.

RED MEMBERS: The red members of the Red-Yellow Podzolic great soil group have a thin organic layer over a yellowish-brown leached surface layer, which overlies a red B horizon. They have developed under a deciduous or mixed forest in a warm temperate to a tropical humid climate. The soil-forming processes are podzolization and laterization (*6*).

The Boswell, Shubuta, Cuthbert, Cahaba, Ruston, Ora, Tilden, and Dulac soils are in this group. The Cuthbert soils, however, intergrade to the Regosol great soil group, and Ora and Dulac intergrade to the Planosol group.

These soils have all apparently developed under similar conditions of climate and vegetation. They range from level to moderately steep, but differences among their profiles probably are not due primarily to their wide range of slope. Many differences occur because of the variation in parent materials. The soils of the Ruston and Ora series developed mainly from friable sandy clay formations (thick beds) of the lower Coastal Plain; the Boswell, from predominantly heavy clays overlain by a thin lens (less than 15 inches) of sandy loam of the lower Coastal Plain. Predominantly clay and sandy clay loam formations of the Coastal Plain were parent material for the Shubuta and Cuthbert soils. The Tilden and Cahaba soils developed from old sandy alluvium of the Coastal Plain. The Dulac soils originated from shallow loess that overlies sandy material of the Coastal Plain.

Profile descriptions of these soils are given in the section, Soils of Newton County.

YELLOW MEMBERS: The yellow members of the Red-Yellow Podzolic great soil group developed from organic and organic-mineral layers that overlie a grayish-yellow leached layer, which rests on a yellow B horizon. In Newton County these soils are very gently sloping to sloping. They developed under a deciduous or mixed forest. Their ground cover may have been somewhat less luxuriant than that on the red members of the Red-Yellow Podzolic great soil group. Climate was apparently the same for the red and the yellow members. The soil-forming processes involved in the development of these yellow soils were laterization and podzolization (*6*).

[1] Italic numbers in parentheses refer to Literature Cited, p. 60.

TABLE 7.—*Soil series of Newton County and their parent material, slope, profile development, and great soil group*

Soil series	Parent material	Slope	Profile development [1]	Great soil group
Bibb	Sandy alluvium of the Coastal Plain	Nearly level	None	Low-Humic Gley.
Binnsville	Predominantly soft calcareous formations (marl)	Very gently sloping to gently sloping.	Weak	Rendzina.
Boswell	Sands and clays over clayey alluvium of the Coastal Plain.	Very gently sloping to moderately steep.	Medium	Red-Yellow Podzolic.
Cahaba	Old sandy alluvium of the Coastal Plain	Level to gently sloping	Weak	Red-Yellow Podzolic.
Catalpa	Alkaline clay alluvium	Nearly level	None	Alluvial.
Chastain	Sandy alluvium of the Coastal Plain	Nearly level	None	Low-Humic Gley.
Cuthbert	Clay and sandy loam formations of the Coastal Plain.	Moderately steep	Weak	Red-Yellow Podzolic.
Dulac	Shallow loess over sandy clay loam of the Coastal Plain.	Level to sloping	Strong	Red-Yellow Podzolic.
Eustis	Sands and loamy sands of the Coastal Plain	Gently sloping to strongly sloping.	Weak	Regosols.
Eutaw	Clay of the Coastal Plain over calcareous formations.	Level to very gently sloping	Medium	Low-Humic Gley.
Franklinton	Shallow loess over sandy clay of the Coastal Plain.	Very gently sloping to sloping.	Strong	Red-Yellow Podzolic.
Houlka	Clay and sandy clay alluvium of the Coastal Plain.	Nearly level	None	Low-Humic Gley.
Independence	Sands and loamy sands of the Coastal Plain	Nearly level	Weak	Regosol.
Iuka	Sandy alluvium of the Coastal Plain	Nearly level	None	Alluvial.
Johnston	Sandy alluvium of the Coastal Plain	Nearly level	None	Humic Gley.
Lauderdale	Predominantly sand formation over Tallahatta (Buhrstone) formation.	Gently sloping to moderately steep.	Weak	Lithosol.
Mantachie	Sandy alluvium of the Coastal Plain	Nearly level	None	Low-Humic Gley.
Mayhew	Thick beds of micaceous sandy clays	Nearly level to very gently sloping.	Medium	Low-Humic Gley.
Myatt	Old sandy alluvium of the Coastal Plain	Nearly level	Weak	Planosol.
Nacogdoches	Sandy clay and clay over volcanic tuff or greensand of the Coastal Plain.	Very gently sloping to moderately steep.	Medium	Reddish-Brown Lateritic.
Ochlockonee	Sandy alluvium of the Coastal Plain	Nearly level	None	Alluvial.
Ora	Unconsolidated beds of acid sands, sandy loams, and sandy clays of the Coastal Plain.	Very gently sloping to sloping.	Medium	Red-Yellow Podzolic.
Prentiss	Old sandy alluvium of the Coastal Plain	Level to sloping	Weak	Red-Yellow Podzolic.
Ruston	Acid sandy clay loam formation of the Coastal Plain.	Very gently sloping to moderately steep.	Medium	Red-Yellow Podzolic.
Savannah	Unconsolidated beds of acid sands, sandy loams, and sandy clays of the Coastal Plain.	Very gently sloping to gently sloping.	Medium	Red-Yellow Podzolic.
Sawyer	Sandy clay loam and clay of the Coastal Plain	Level to sloping	Medium	Red-Yellow Podzolic.
Shubuta	Sandy clay and clay of the Coastal Plain	Very gently sloping to moderately steep.	Medium	Red-Yellow Podzolic.
Stough	Old sandy alluvium of the Coastal Plain	Level to very gently sloping	Weak	Planosol.
Sumter	Predominantly Selma chalk (calcareous marl)	Gently sloping	Weak	Rendzina.
Tilden	Old sandy alluvium of the Coastal Plain	Level to sloping	Weak	Red-Yellow Podzolic.
Una	Clayey alluvium of the Coastal Plain	Nearly level	None	Low-Humic Gley.
Vaiden	Clay of the Coastal Plain over calcareous formations.	Very gently sloping to sloping.	Medium	Red-Yellow Podzolic.

[1] For soil series of the Humic Gley and Low-Humic Gley great soil groups, the word "none" means little or no textural profile development.

The yellow members in this county belong to the Vaiden, Sawyer, Prentiss, Savannah, and Franklinton series. The Prentiss, Savannah, and Franklinton soils are intergrades to the Planosol great soil group.

The yellow members of the Red-Yellow Podzolic great soil group have formed in different kinds of parent material. The Vaiden soils are from Coastal Plain clay that overlies calcareous marl; the Sawyer, from sandy clay loam and clay of the Coastal Plain; and the Savannah, from unconsolidated beds of acid sands, sandy loams, and sandy clays of the Coastal Plain. The Prentiss soils were derived from old alluvium of the Coastal Plain, and the Franklinton, from shallow loess overlying sandy clay of the Coastal Plain.

Profiles of the yellow members are described in the section, Soils of Newton County.

Reddish-Brown Lateritic soils

The Reddish-Brown Lateritic soils have dark reddish-brown surface soils, red friable clay B horizons, and red or reticulately mottled lateritic parent material. They have developed under a humid tropical climate that has wet and dry seasons. Development took place under for-

est vegetation. The soil-forming process involved in the development of these soils is laterization (*6*).

The Nacogdoches soils of Newton County are in this group. They range from very gently sloping to moderately steep. The soils of the Nacogdoches series have formed predominantly in clay and sandy clay formations (thin beds) over volcanic tuff or greensands of the lower Coastal Plain.

A profile description of Nacogdoches soil is given in the section, Soils of Newton County.

Humic Gley soils

This group of poorly to very poorly drained soils has a thick, dark-colored A_1 horizon underlain by a mineral gley horizon. The Humic Gley soils occur naturally under either swamp-forest or herbaceous marsh vegetation. The climate is mostly humid and subhumid. These soils have a high content of organic matter. Most of them have reactions somewhere in the range of medium acid to mildly alkaline (*9*).

The soils of the Johnston series have most of these characteristics. They are poorly drained. Their surface soils are high in organic matter, medium to strongly acid, and about 15 inches thick. They are underlain by gray sandy clay at about 25 inches. A profile description is given in the section, Soils of Newton County.

Low-Humic Gley soils

The Low-Humic Gley soils usually have brown or dark-gray surface horizons underlain by light-gray material. They have developed in humid regions under vegetation consisting of mixed grasses and forest. The soil development process is gleization (*9*). In Newton County, Bibb, Chastain, Eutaw, Houlka, Mantachie, Mayhew, and Una soils are members of this great soil group.

These soils are poorly drained and, with the exception of the Eutaw and Mayhew, have developed from general alluvium. The Eutaw soils have developed from heavy clays that overlie calcareous formations at depths between 36 and 48 inches. The Mayhew soils have developed from thick beds of micaceous sandy clays. Low-Humic Gley soils occupy nearly level to depressional areas. Profile descriptions are given in the section, Soils of Newton County.

Planosol soils

The distinguishing characteristic of Planosol soils is one or more layers of cementation or of high clay content in a horizon that is abruptly separated from the adjacent layer and sharply contrasts with it. These soils have developed on nearly level uplands and terraces under grass or forest vegetation (*9*).

In Newton County the Stough and Myatt soils are classified as Planosols. Both have developed from old sandy alluvium of the Coastal Plain. The section, Soils of Newton County, contains profile descriptions of these two soils.

Rendzina soils

The Rendzina soils have a dark grayish-brown to black surface layer underlain by gray or yellowish, usually soft, calcareous material. They have developed under grass and some broad-leaved forest trees, in a cool to hot and humid to semiarid climate. The process of soil development is calcification (*6*).

In Newton County the Binnsville and Sumter soils are members of the Rendzina great soil group. These soils are poorly drained to somewhat poorly drained, and they have developed from calcareous marl. Profile descriptions of Binnsville and Sumter soils are given in the section, Soils of Newton County.

Alluvial soils

Alluvial soils are developing from transported and relatively recently deposited material, called alluvium. There has been little or no modification of the original material through soil-forming processes. The main characteristic of an Alluvial soil is the varied materials in the horizons. Because Alluvial soils have similar parent material and are differentiated mainly on the basis of drainage, they constitute a soil catena (*6*).

In Newton County, Alluvial soils are on first bottoms along streams and in depressions in the uplands. They are nearly level and have medium to slow internal drainage. The Catalpa, Iuka, and Ochlockonee soils are in this great soil group. Their profile descriptions are in the section, Soils of Newton County.

Lithosol soils

Lithosol soils vary greatly in character and degree of soil development, in nature and depth of soil and soil material, and in external features such as relief, stoniness, and drainage. For the most part, however, they are shallow soils occurring in rough or hilly areas. These soils are stony in many places and commonly have little soil development and no definite profile. The parent soil materials are exposed in many places. The vegetation is primarily grass and scrubby forest (*6*).

Lauderdale soils are the only Lithosols in Newton County. They are on sand formations (thin, about 14 inches thick) that overlie the Tallahatta (Buhrstone) formation. Their profile description is in the section, Soils of Newton County.

Regosol soils

Sands that have little profile development are in the Regosol great soil group. They have developed under a humid to arid climate. These soils are excessively drained, and their vegetation is scanty grass or scrubby forest (*9*).

The Regosols in Newton County are the Eustis and Independence soils. These soils are on sands and loamy sands of the lower Coastal Plain. Their profile descriptions are in the section, Soils of Newton County.

Additional Facts About the County

This section is intended primarily for those not familiar with Newton County. It tells something about the early history, population, and public facilities and furnishes statistics on agriculture selected from reports of the United States Bureau of the Census.

Organization and Development

Newton County was created from the southern half of what was originally Neshoba County by an act of the Mississippi State Legislature on February 26, 1836. This land was part of a purchase made from the Choctaw

Indians by the United States Government. The treaty, known as The Treaty of Dancing Rabbit Creek, was signed September 28, 1830 (*1*).

Most of the early settlers came from Virginia, Georgia, Alabama, and North and South Carolina. By 1840, 2,527 people lived in this county (*1*). There was a steady increase to 24,249 in 1940. By 1950 the population had decreased 6.5 percent, or to 22,681. Newton had a population of 2,912; Union (the part in Newton County) had a population of 1,440; Decatur, the county seat, 1,225; Hickory, 614; and Chunky, 258. The population was classed as 87.2 percent rural and 12.8 percent urban.

Water Supply

The water supply for household use and livestock generally is adequate. Shallow wells and springs provide most of the water for homes in the north-central hills section. Deep wells and some cisterns are sources of water in the Jackson formation.

Perennial streams, springs, and ponds furnish most of the water for livestock. In the winter many intermittent streams carry enough water for farm animals. During long periods of drought, water must be hauled if a well of sufficient capacity is not available.

Vegetation

In 1954 farm woodlands occupied 136,642 acres, chiefly on steep slopes and in wet areas. Nearly 75 percent of this acreage was in shortleaf and loblolly pine, and the remaining acreage was in hardwoods. Forest, reestablished on previously tilled areas, is commonly shortleaf or loblolly pine. Such stands are increasing each year.

The uplands of the county originally supported a heavy growth of shortleaf pine with some red oak, white oak, gum, and hickory. The bottoms were covered with such hardwoods as gum, poplar, hickory, and red, white, and water oaks. Not much timber that will produce saw logs is left in the county. That remaining is on land held mainly by the United States Indian Service and is in the Bienville National Forest.

Farm-grown forest products sold in 1954 accounted for approximately 4 percent of the value of all marketed farm products.

Cultural Development and Improvements

Twelve senior high schools are conveniently located in Newton County. A school for Indians is maintained at Conehatta by the United States Department of Interior. East Central Mississippi Junior College, in Decatur, is supported by Newton, Scott, Leake, Winston, and Neshoba Counties. The Baptist Church supports a junior college in Newton. Buses transport students to school from all parts of the county. Churches of various denominations serve all communities.

Rural electrification lines have been extended to practically all parts of the county. In 1954, 2,478 farm homes reported having electricity. Most of these homes have ranges, washing machines, refrigerators, deep freezers, radios, television sets, and similar electrical appliances. In 1954, 227 farm families reported telephones.

Rural houses vary from one- or two-room dwellings to modern, well-constructed and well-maintained brick homes. The better houses are usually built on the smoother uplands and stream terraces. In general, the condition of the buildings and farm improvements and use of modern conveniences are closely associated with the productivity of the soils and other land conditions.

Transportation

Two railroads serve the county. The Illinois Central (Yazoo) crosses from east to west, and the Gulf, Mobile and Ohio runs north and south. Lines of the Gulf, Mobile and Ohio also cross the northeastern and northwestern corners of the county.

United States Highway No. 80 extends east and west across the central part of the county. State Highway No. 15 runs through the center of the county from north to south, and State Highway No. 492, also paved, crosses the northern part. Some of the county roads are graveled all-weather roads.

Bus and truck lines operate over United States Highway No. 80 and State Highway No. 15.

Industry

A number of industries have been established. A garment factory, cottonseed oil mill, fertilizer factory, feed mill, cotton gin, woodworking factory, cheese plant, and milk cooling plant are located in Newton. Decatur has a garment factory, feed mill, sawmill, and cotton gin. A garment factory, cotton compress, woodworking factory, feed mill, and cotton gin are in Union. Although these enterprises are small, they employ several hundred people.

Agriculture

Little information is available on the early agriculture of Newton County. The Choctaw Indians grew some corn, beans, and melons, but they were essentially hunters and not farmers (*1*). Most of the early white settlers located where the Indians had been, and they cultivated the more nearly level land. They grew corn, peas, beans, potatoes, rice, wheat, and similar crops for use of the family and to provide feed for livestock.

Agriculture developed slowly because of the distance to markets. Cotton was grown after a few years; it had to be hauled to markets at Mobile, Ala. Overland transportation was slow. The Alabama and Vicksburg Railroad, now the Illinois Central, was started in 1839 in Vicksburg and reached Newton in 1860. Before 1860, cotton was hauled to Brandon, 60 miles to the West. With the coming of the railroad more cotton was grown, and in 1889, 13,079 bales were produced (*1*). In 1929, 20,874 bales of cotton were harvested from 41,766 acres of land. The area in cotton started decreasing when acreage restrictions began in 1933. In 1954, 11,610 acres were planted to cotton, as compared to 18,083 acres in 1949.

Because less cotton is being grown, more acreage has been planted to corn. Part of the former cotton acreage is also in pasture, since dairying and raising of beef cattle have supplemented cotton as a source of cash income. There were 266 dairy farms in the county in 1954. The income from dairy products in 1954 was 29.2 percent of the total farm income.

Land use

In 1954, 265,420 acres, or 71.5 percent of the total area of the county, was in farms. The harvested cropland decreased from 91,551 acres in 1939 to 55,732 acres in 1954. In the same period, the acreage of woodland increased from 100,449 acres to 136,642 acres.

The smoother, more productive land is used for crops, and steep and wet land is in trees and grasses. The tendency in recent years has been to divert steep and eroded land from crops to trees. Acreage allotments on cotton have caused more farmers to change to livestock for a cash income. This change brings more soil improvement because pastures are established and close-growing crops are grown.

Farm tenure

In 1954 owners operated 66.1 percent of the farms; part owners, 14.4 percent; and tenants, 19.3 percent. Less than 1 percent of the farms were operated by managers.

Types of farms

This county is part of a cotton-general farming area in Mississippi. Cotton dominates as the cash crop, but the agriculture is not so specialized as in other cotton-producing areas of the State. Dairying has increased greatly, and more beef cattle are raised every year.

The 1954 census reports 1,222 miscellaneous and unclassified farms in the county. The remaining farms were classified by major source of income as follows:

Type of farm:	*Number*
Cotton	1,006
Dairy	266
General	144
Primarily crop	35
Primarily livestock	15
Crop and livestock	94
Livestock, other than dairy and poultry	95
Poultry	21
Grain	20
Vegetable	10

Size and number of farms

The farms were classified by size, as follows: 185 farms had 10 acres or less; 502, 10 to 29 acres; 503, 30 to 49 acres; 343, 50 to 69 acres; 490, 70 to 99 acres; 362, 100 to 139 acres; 205, 140 to 179 acres; 96, 180 to 219 acres; 41, 220 to 259 acres; 104, 260 to 499 acres; 29, 500 to 999 acres; 10, 1,000 acres or more. All but a few of the larger farms are located in the prairie section of the county.

The number of farms decreased from 3,483 in 1940 to 2,870 in 1954, or about 17.6 percent; whereas the average size of farms increased from 78.8 to 92.5 acres, or 17.4 percent.

Crops

The most important crops grown in the county are corn, hay, cotton, oats, cowpeas, and sweetpotatoes. In 1954 the harvested acreages of these crops were as follows:

Crop:	*Acres*
Corn	27,177
Hay	12,201
Cotton	11,610
Oats	2,091
Cowpeas (except for processing)	729
Sweetpotatoes (for home use or for sale)	99

The actual acreage of sweetpotatoes is somewhat larger than shown in the foregoing list because acreage was not reported for farms harvesting less than 20 bushels of sweetpotatoes.

Livestock and livestock products

Milk of both grades A and C is collected from all parts of the county. It goes to Newton, Philadelphia in Neshoba County, and Meridian in Lauderdale County. There are markets in Union and Decatur for cattle and hogs, and some are marketed in Meridian. Most of the poultry is sold at Morton in Scott County. The number of domestic animals on the farms is given in table 8.

TABLE 8.—*Number of livestock of all ages on the farms in Newton County in stated years*

Livestock	1930	1940	1950	1954
Cattle	15,814	[1] 16,202	23,465	33,410
Milk cows	6,387	7,105	9,584	12,814
Horses	1,430	[1] 1,964	1,500	937
Mules	4,372	[1] 4,266	3,707	2,364
Hogs	5,507	[2] 7,083	7,028	6,460
Sheep	39	([3])	25	219
Goats	152	[2] 183	([3])	([3])
Chickens	[1] 75,630	[2] 87,302	[2] 96,635	[2] 98,206
Turkeys raised	505	180	2,018	5,516
Ducks raised	82	83	364	364

[1] Over 3 months old. [2] Over 4 months old. [3] Not reported.

Glossary[2]

Alluvium. Fine material, such as sand, mud, or other sediments, deposited on land by streams.

Calcareous soil. A soil containing calcium carbonate (lime), or a soil alkaline in reaction because of the presence of calcium carbonate. A soil containing enough calcium carbonate to effervesce (fizz) when treated with dilute hydrochloric acid.

Claypan. A compact, slowly permeable soil horizon rich in clay and separated more or less abruptly from the overlying soil.

Colluvium. Mixed deposits of soil material and rock fragments near the base of rather steep slopes. The deposits have accumulated through soil creep, slides, and local wash.

Complex, soil. An intimate mixture of areas of different kinds of soil that are too small to be shown separately on a publishable soil map. The whole group of soils is shown together as a mapping unit and described as a pattern of soils.

Consistence, soil. The properties of soil material that determine its resistance to crushing and its ability to be molded or changed in shape. The following terms are frequently used to describe consistence:

Brittle. When dry, soil breaks with a clean fracture or shatters to cleanly broken hard fragments if struck a sharp blow.

Compact. Dense and firm arrangement of particles that are not cemented.

Firm. Soil material crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Friable. Soil material crushes easily under gentle to moderate pressure between thumb and forefinger and coheres when pressed together.

Impervious. Very resistant to penetration by water and, normally, to penetration by air and plant roots.

Plastic. Soil material forms a wire or spindle when rolled in hands; moderate pressure required to change shape of the soil mass; easily molded and puttylike; not friable.

Sticky. After pressure, soil material adheres to both thumb and forefinger and tends to stretch somewhat, rather than pulling free from either finger; adhesive rather than cohesive when

[2] Most of the definitions are from Soils and Men (*6*), the Soil Survey Manual (*7*), and Soil (*8*).

wet but normally very cohesive when dry; decided tendency to stick to other materials and objects when wet.

Stiff. Soil material resists deformation or rupture; firm, tenacious, and tending to imperviousness. Term is normally applied to consistence of soil when in place and moderately wet.

Tight. Compact, impervious, tenacious, and normally plastic.

Contour furrows. Furrows plowed at right angles to the direction of slope, at the same level throughout, and ordinarily at comparatively close intervals.

Cropland. Land regularly used for crops, except forest crops. Included are rotation pasture, cultivated summer fallow, and other land ordinarily used for crops but temporarily idle.

Erosion, soil. The wearing away or removal of soil material by water, wind, or other geological agencies.

Fertility, soil. The quality that enables a soil to provide the proper compounds, in the proper amounts and in the proper balance, for the growth of specified plants when light, moisture, temperature, physical condition of the soil, and similar factors are favorable.

First bottom. The normal flood plain of a stream, part of which may be flooded infrequently; land along a stream that is subject to overflow.

Forest. Land that has a stand of trees of any age or size, including seedlings, but of species that will reach a minimum average height of 6 feet at maturity; or land from which such a stand has been removed and on which no other use has been substituted.

Fragipan. Dense and brittle pan or layer in soils that owes its hardness mainly to extreme density or compactness rather than to high clay content or cementation. Removed fragments are friable, but the material in place is so dense that roots cannot penetrate, and water moves through it very slowly because of the small size of the pores.

Genesis, soil. The way in which the soil originates, particularly the processes responsible for the development of the A and B horizons, or solum, from the unconsolidated parent material. *See* Horizon, soil.

Glauconite. A dull-green, amorphous iron-potassium silicate occurring abundantly in greensand.

Gley soil. A soil containing a horizon in which waterlogging and consequent lack of oxygen have caused the material to be of neutral gray color.

Great soil group. Any one of several broad soil groups having common internal soil characteristics.

Green-manure crop. Any crop worked into the soil while green or soon after maturity for the purpose of improving the soil.

Horizon, soil. A layer of soil, approximately parallel to the surface of the soil, that has distinct characteristics produced by soil-forming processes.

A horizon. The master horizon consisting of (1) one or more mineral horizons having maximum accumulation of organic matter; (2) surface or subsurface horizons that are lighter in color than the underlying horizon and which have lost clay mineral, iron, and aluminum with resultant concentration of the more resistant minerals; or (3) horizons belonging to both of these categories.

B horizon. The master horizon of altered material characterized by (1) an accumulation of clay, iron, or aluminum and accessory organic material; or (2) more or less blocky or prismatic structure together with other characteristics, such as stronger colors, that are unlike those of the A horizons or those of the underlying horizons of nearly unchanged material; or (3) characteristics of both of these categories.

C horizon. A layer of unconsolidated material relatively little affected by organisms and, in chemical, physical, and mineralogical composition, presumed to be similar to material from which at least part of the overlying B and C horizons have developed.

D horizon. Any stratum underlying the C horizon that is unlike the material from which the C horizon developed. If the C horizon is not present, the D horizon is any stratum underlying the B horizon that is unlike the material from which the B horizon developed.

Internal drainage. That quality of a soil that permits the downward flow of water through it.

Laterization. A process of soil formation in which rock is decomposed and leaves residual deposits of red color.

Leaching, soil. Removal of materials in solution by the passage of water through the soil.

Loess. Geological deposit of relatively uniform, fine material, mostly silt, that presumably was transported by wind.

Morphology, soil. The constitution of the soil, including the texture, structure, consistence, color, and other physical, chemical and biologic properties of the various horizons that make up the soil profile.

Mottling, soil. Contrasting color patches that vary in number and size. Descriptive terms for mottling are as follows: Contrast—faint, distinct, and prominent; abundance—few, common, and many; and size—fine, medium, and coarse. The size measurements are as follows: Fine, commonly less than 5 mm. (about 0.2 in.) across the greatest dimension; medium, commonly from 5 to 15 mm. (about 0.2 to 0.6 in.) across the greatest dimension; and coarse, commonly more than 15 mm. (about 0.6 in.) across the greatest dimension.

Natural drainage. Conditions of drainage that existed during development of the soil, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may result from other causes, as natural deepening of channels or filling of depressions and thus blocking drainage outlets. The following terms are used to express natural drainage:

Excessively drained. Water is removed from the soil very rapidly.

Somewhat excessively drained. Water is removed from the soil rapidly.

Well drained. A well-drained soil has good drainage. Water is removed readily but not rapidly.

Moderately well drained. Water is removed from the soil somewhat slowly so that the profile is wet for a small but significant part of the time.

Imperfectly or somewhat poorly drained. Water is removed from the soil slowly enough to keep it wet for significant periods but not all the time.

Poorly drained. Water is removed so slowly that the soil remains wet for a large part of the time. The water table is commonly at or near the surface during a considerable part of the year.

Very poorly drained. Water is removed from the soil so slowly that the water table remains at or on the surface the greater part of the time. Soils of this class are frequently ponded.

Nutrient, plant. Any element taken in by a plant, essential to its growth, and used by it in the elaboration of its food and tissue. Among these elements are nitrogen, phosphorus, calcium, potassium, magnesium, sulfur, iron, manganese, copper, boron, zinc, and perhaps others, obtained from the soil; and carbon, hydrogen, and oxygen obtained largely from the air and water.

Parent material. The unconsolidated mass of rock material (or peat) from which the soil profile develops. *See* C horizon; Profile; Substratum.

Permanent pasture. Pasture that occupies the soil for a long time in contrast to rotation pasture, which occupies the soil for only a year or two in a rotation cycle.

Permeability, soil. The quality of a soil that enables it to transmit water or air.

Phase, soil. A subdivision of any class in the soil classification system that cannot itself be subdivided. In this report, the soil phases are subdivisions of soil types and are made chiefly to cover variations in external characteristics, such as relief, stoniness, or erosion.

Podzolization. The process by which soils are depleted of bases, become more acid, and develop leached surface layers from which clay has been removed.

Productivity, soil. The capability of a soil to produce a specified plant or sequence of plants under a given system of management.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material. *See* Horizon, soil; Parent material.

Reaction. The acidity or alkalinity of the soil expressed in words or pH values as follows:

Extremely acid	Below 4.5
Very strongly acid	4.5–5.0
Strongly acid	5.1–5.5
Medium acid	5.6–6.0
Slightly acid	6.1–6.5
Neutral	6.6–7.3
Mildly alkaline	7.4–7.8
Moderately alkaline	7.9–8.4

Relief. The elevations or inequalities of a land surface considered collectively.

Sand. Small rock or mineral fragments with diameters ranging between 0.05 mm. (0.002 in.) and 2.0 mm. (0.079 in.). The term "sand" is also applied to soils containing 85 percent or more of sand and not more than 10 percent of clay.

Series, soil. A group of soils having the same profile characteristics; the same general range in color, structure, consistence, and sequence of horizons; the same general conditions of relief and drainage; and usually a common or similar origin and mode of formation. A group of soil types closely similar in all respects except for texture of the surface soil.

Silt. Small mineral grains ranging from 0.002 mm. (0.000079 in.) to 0.05 mm. (0.002 in.) in diameter. The term "silt" is also applied to soils containing 80 percent or more of silt and less than 12 percent of clay.

Soil. The natural medum for the growth of land plants on the face of the earth; it is composed of organic and mineral materials.

Solum. The upper part of a soil profile, above the parent material, in which the process of soil formation is active. The solum of mature soils consists of the A and B horizons.

Structure, soil. The arrangement of the individual grains into aggregates that make up the soil mass; the term may refer to the natural arrangement of the grains when the soil is in place and undisturbed or when the soil is at any degree of disturbance. The principal forms of structure are platy, prismatic, columnar (prisms with rounded tops), blocky (angular or subangular), and granular. Structureless soils are (1) single grain—each grain by itself, as in dune sand, or (2) massive—the particles adhering together without any regular cleavage, as in claypans and hardpans.

Subsoil. Technically, the B horizon; roughly, that part of the profile below plow depth in which roots normally grow.

Substratum. Material underlying the subsoil. *See* Horizon, soil.

Surface runoff. Amount of water removed by flow over the surface of the soil. The amount and rapidity of runoff are affected by texture, structure, and porosity of the surface soil; the plant cover; the prevailing climate; and the slope of the soil. Terms used to express relative degrees of runoff are very rapid, rapid, medium, slow, very slow, and ponded.

Surface soil. That part of the upper profile normally stirred by plowing, the A horizon.

Texture, soil. The size of the individual particles making up the soil mass. The various soil separates, as sand, silt, and clay, determine texture. A coarse-textured soil is high in content of sand; a fine-textured one contains a large proportion of clay.

Tilth. The physical condition of soil in respect to its fitness for the growth of a specified plant or sequence of plants.

Type, soil. A subgroup or category under the soil series that is based on the texture of the surface soil.

Undifferentiated soil group. Two or more related soils that are mapped as a single unit because, in practical use, their differences are too small to justify separate recognition.

Upland (geologic). Lands consisting of materials unworked by water in recent geologic time and ordinarily lying at higher elevations than the alluvial plains.

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Nondiscrimination Statement

Nondiscrimination Policy

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To File an Employment Complaint

If you wish to file an employment complaint, you must contact your agency's EEO Counselor (http://directives.sc.egov.usda.gov/33081.wba) within 45 days of the date of the alleged discriminatory act, event, or personnel action. Additional information can be found online at http://www.ascr.usda.gov/complaint_filing_file.html.

To File a Program Complaint

If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form, found online at http://www.ascr.usda.gov/complaint_filing_cust.html or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter by mail to U.S. Department of Agriculture; Director, Office of Adjudication; 1400 Independence Avenue, S.W.; Washington, D.C. 20250-9419; by fax to (202) 690-7442; or by email to program.intake@usda.gov.

Persons with Disabilities

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If you have other disabilities and wish to file a program complaint, please see the contact information above. If you require alternative means of communication for

program information (e.g., Braille, large print, audiotape, etc.), please contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

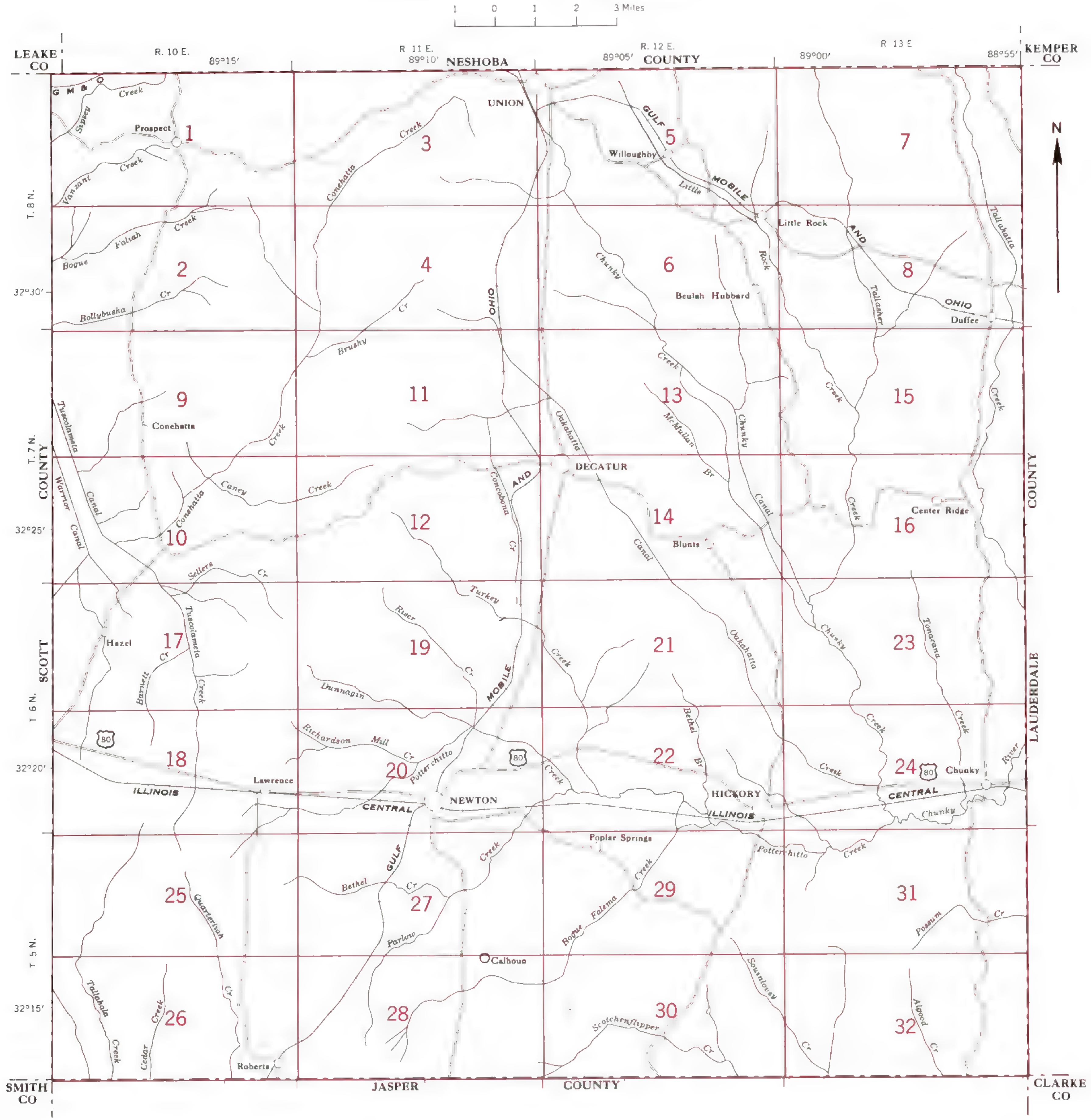
Supplemental Nutrition Assistance Program

For additional information dealing with Supplemental Nutrition Assistance Program (SNAP) issues, call either the USDA SNAP Hotline Number at (800) 221-5689, which is also in Spanish, or the State Information/Hotline Numbers (http://directives.sc.egov.usda.gov/33085.wba).

All Other Inquiries

For information not pertaining to civil rights, please refer to the listing of the USDA Agencies and Offices (http://directives.sc.egov.usda.gov/33086.wba).

INDEX TO MAP SHEETS
NEWTON COUNTY, MISSISSIPPI



CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Roads
- Good motor
- Poor motor
- Trail
- Marker, U. S.

Railroads
- Single track
- Multiple track
- Abandoned

Bridges and crossings
- Road
- Trail, foot
- Railroad
- Ferry
- Ford
- Grade
- R. R. over
- R. R. under
- Tunnel

Buildings
- School
- Church
- Station

Mine and Quarry
- Shaft
- Dump
- Prospect

Pits, gravel or other

Power line

Pipeline

Cemetery

Dam

Levee

Tank

Cotton gin

Forest fire or lookout station

Canal lock (point upstream)

BOUNDARIES

National or state

County

Township, civil

Township, U. S.

Section line, corner

City (corporate)

Reservation

Land grant

DRAINAGE

Streams
- Perennial
- Intermittent, unclass.
- Crossable with tillage implements
- Not crossable with tillage implements

Canals and ditches — CANAL, DITCH

Lakes and ponds
- Perennial
- Intermittent

Wells — flowing

Springs

Marsh

Wet spot

RELIEF

Escarpments
- Bedrock
- Other

Prominent peaks

Depressions — Large, Small
- Crossable with tillage implements
- Not crossable with tillage implements
- Contains water most of the time

SOIL SURVEY DATA

Soil type outline and symbol — Dx

Gravel

Stones

Rock outcrops

Chert fragments

Clay spot

Sand spot

Gumbo or scabby spot

Made land

Erosion
- Uneroded spot — U
- Sheet, moderate — S
- Sheet, severe — SS
- Gully, moderate — G
- Gully, severe — GG
- Sheet and gully, moderate — SG
- Wind, moderate
- Wind, severe
- Blowout
- Wind hummock
- Overblown soil

Gullies

Areas of alkali and salts
- Strong — A
- Moderate — M
- Slight — S

Free of toxic effect — F

Sample location — 26

Saline spot

SOILS LEGEND

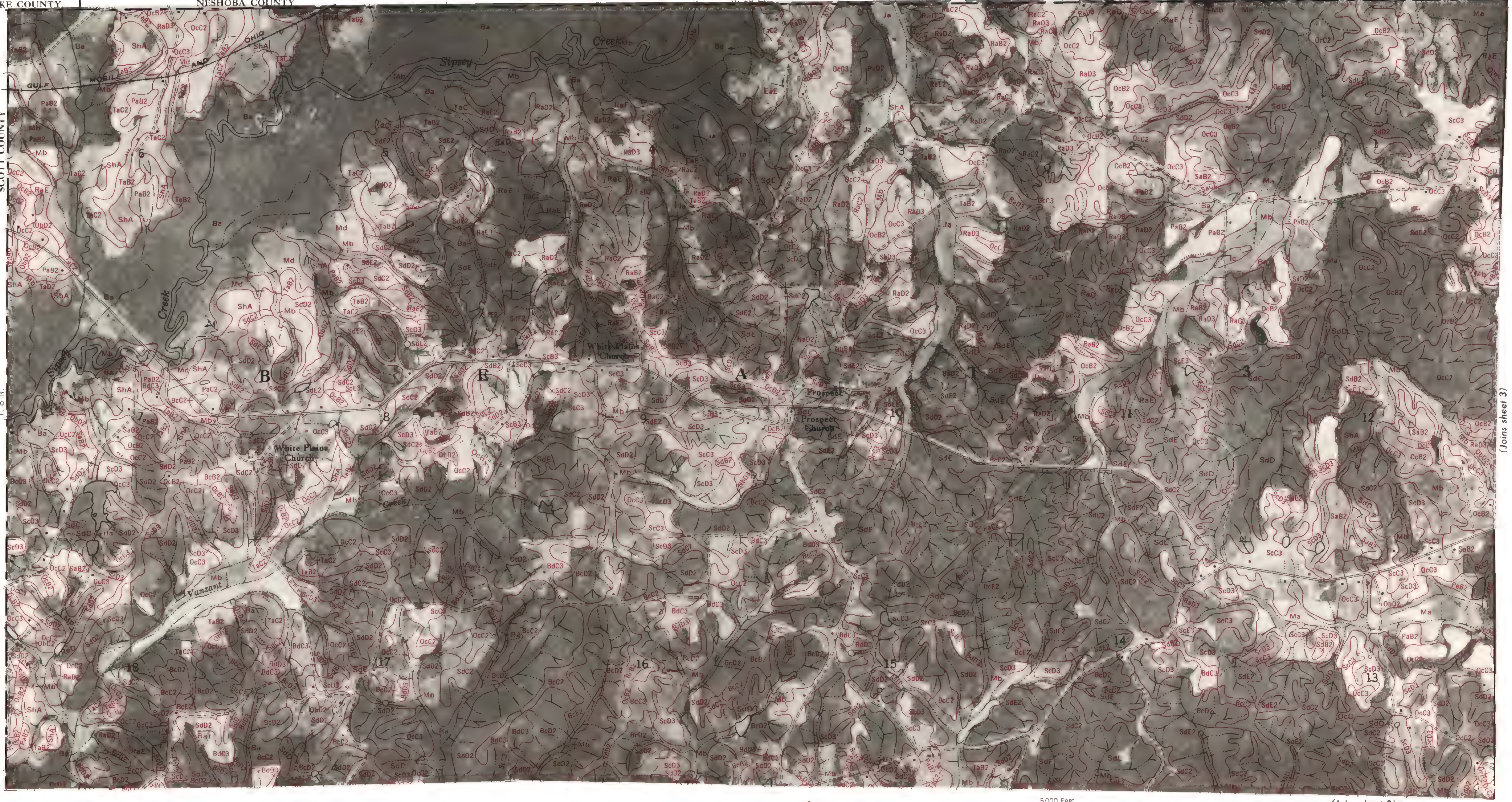
SYMBOL	NAME
Ba	Bibb soils
BbB2	Binnsville clay, eroded very gently sloping marly phase
BbC3	Binnsville clay, severely eroded gently sloping marly phase
BcB2	Boswell fine sandy loam, eroded very gently sloping phase
BcC2	Boswell fine sandy loam, eroded gently sloping phase
BcD2	Boswell fine sandy loam, eroded sloping phase
BcE2	Boswell fine sandy loam, eroded strongly sloping phase
BcF	Boswell fine sandy loam, moderately steep phase
BdC3	Boswell sandy clay loam, severely eroded gently sloping phase
BdD3	Boswell sandy clay loam, severely eroded sloping phase
CaA	Cahaba very fine sandy loam, level phase
CaB2	Cahaba very fine sandy loam, eroded very gently sloping phase
CaC2	Cahaba very fine sandy loam, eroded gently sloping phase
Cb	Catalpa clay, local alluvium phase
Cc	Chastain soils
EaC	Eustis loamy sand, gently sloping dark surface phase
EaE	Eustis loamy sand, strongly sloping dark surface phase
EbA	Eutaw-Vaiden clays, level phases
EbB	Eutaw-Vaiden clays, very gently sloping phases
Ha	Houlka clay
Ia	Independence loamy fine sand
Ib	Iuka very fine sandy loam, local alluvium phase
Ic	Iuka fine sandy loam
Ja	Johnston loam
LaC2	Lauderdale stony fine sandy loam, eroded gently sloping phase
LaE	Lauderdale stony fine sandy loam, sloping to moderately steep phases
LbC2	Lauderdale-Boswell complex, eroded gently sloping phases
LbD2	Lauderdale-Boswell complex, eroded sloping phases
LbE	Lauderdale-Boswell complex, strongly sloping and moderately steep phases
Ma	Mantachie soils
Mb	Mantachie very fine sandy loam, local alluvium phase
McA	Mayhew fine sandy clay loam, nearly level phase
McB	Mayhew fine sandy clay loam, very gently sloping phase
Md	Myatt very fine sandy loam
NaB2	Nacogdoches loam, eroded very gently sloping phase
NaC2	Nacogdoches loam, eroded gently sloping phase
NaD2	Nacogdoches loam, eroded sloping phase
NaE	Nacogdoches loam, strongly sloping phase
NaE2	Nacogdoches loam, eroded strongly sloping phase
NaF2	Nacogdoches loam, eroded moderately steep phase
NbB3	Nacogdoches sandy clay loam, severely eroded very gently sloping phase
NbC3	Nacogdoches sandy clay loam, severely eroded gently sloping phase
NbD3	Nacogdoches sandy clay loam, severely eroded sloping phase
NbE3	Nacogdoches sandy clay loam, severely eroded strongly sloping phase
Oa	Ochlockonee fine sandy loam, local alluvium phase
ObD2	Ora fine sandy loam, eroded sloping phase
OcB	Ora and Dulac soils, very gently sloping phases
OcB2	Ora and Dulac soils, eroded very gently sloping phases
OcC	Ora and Dulac soils, gently sloping phases
OcC2	Ora and Dulac soils, eroded gently sloping phases
OcC3	Ora and Dulac soils, severely eroded gently sloping phases

SYMBOL	NAME
PaA	Prentiss very fine sandy loam, level phase
PaB	Prentiss very fine sandy loam, very gently sloping phase
PaB2	Prentiss very fine sandy loam, eroded very gently sloping phase
PaC2	Prentiss very fine sandy loam, eroded gently sloping phase
PaD2	Prentiss very fine sandy loam, eroded sloping phase
RaB	Ruston fine sandy loam, very gently sloping phase
RaB2	Ruston fine sandy loam, eroded very gently sloping phase
RaB3	Ruston fine sandy loam, severely eroded very gently sloping phase
RaC	Ruston fine sandy loam, gently sloping phase
RaC2	Ruston fine sandy loam, eroded gently sloping phase
RaC3	Ruston fine sandy loam, severely eroded gently sloping phase
RaD	Ruston fine sandy loam, sloping phase
RaD2	Ruston fine sandy loam, eroded sloping phase
RaD3	Ruston fine sandy loam, severely eroded sloping phase
RaE	Ruston fine sandy loam, strongly sloping phase
RaE2	Ruston fine sandy loam, eroded strongly sloping phase
RaE3	Ruston fine sandy loam, severely eroded strongly sloping phase
RaF	Ruston fine sandy loam, moderately steep phase
RaF2	Ruston fine sandy loam, eroded moderately steep phase
RaF3	Ruston fine sandy loam, severely eroded moderately steep phase
SaB	Savannah and Franklinton soils, very gently sloping phases
SaB2	Savannah and Franklinton soils, eroded very gently sloping phases
SaC	Savannah and Franklinton soils, gently sloping phases
SaC2	Savannah and Franklinton soils, eroded gently sloping phases
SbA	Sawyer fine sandy loam, level phase
SbB	Sawyer fine sandy loam, very gently sloping phase
SbB2	Sawyer fine sandy loam, eroded very gently sloping phase
SbC2	Sawyer fine sandy loam, eroded gently sloping phase
SbD2	Sawyer fine sandy loam, eroded sloping phase
ScB3	Shubuta clay loam, severely eroded very gently sloping phase
ScC3	Shubuta clay loam, severely eroded gently sloping phase
ScD3	Shubuta clay loam, severely eroded sloping phase
ScE3	Shubuta clay loam, severely eroded strongly sloping phase
SdB	Shubuta fine sandy loam, very gently sloping phase
SdB2	Shubuta fine sandy loam, eroded very gently sloping phase
SdC	Shubuta fine sandy loam, gently sloping phase
SdC2	Shubuta fine sandy loam, eroded gently sloping phase
SdD	Shubuta fine sandy loam, sloping phase
SdD2	Shubuta fine sandy loam, eroded sloping phase
SdE	Shubuta fine sandy loam, strongly sloping phase
SdE2	Shubuta fine sandy loam, eroded strongly sloping phase
SgF	Shubuta and Cuthbert soils, moderately steep phases
ShA	Stough very fine sandy loam, level phase
ShB	Stough very fine sandy loam, very gently sloping phase
SkC2	Sumter clay, eroded gently sloping phase
TaA	Tilden very fine sandy loam, level phase
TaB	Tilden very fine sandy loam, very gently sloping phase
TaB2	Tilden very fine sandy loam, eroded very gently sloping phase
TaC	Tilden very fine sandy loam, gently sloping phase
TaC2	Tilden very fine sandy loam, eroded gently sloping phase
TaD2	Tilden very fine sandy loam, eroded sloping phase
Ua	Una clay, local alluvium phase
VaB	Vaiden-Eutaw clays, very gently sloping phases
VaC2	Vaiden-Eutaw clays, eroded gently sloping phases
VaD2	Vaiden-Eutaw clays, eroded sloping phases

Soils surveyed 1951-57 by L. C. Murphree, H. L. Neal, C. H. Freeman, and W. W. Nye, Soil Conservation Service, and L. C. Standifer, Mississippi Agricultural Experiment Station.
Correlation by Irving L. Martin, Soil Conservation Service.

Soil map constructed 1959 by Cartographic Division, Soil Conservation Service, USDA, from 1955 aerial photographs. Controlled mosaic based on Mississippi plane coordinate system, east zone, transverse Mercator projection, 1927 North American datum.

(1)



This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, to [illegible] complete [illegible] survey report [illegible] write the Soil Conservation Service, U. S. Department of Agriculture, Washington [illegible]. This map compiled from aerial photographs taken in 19[illegible]

Range, township, and section corners shown on this map are indefinite.

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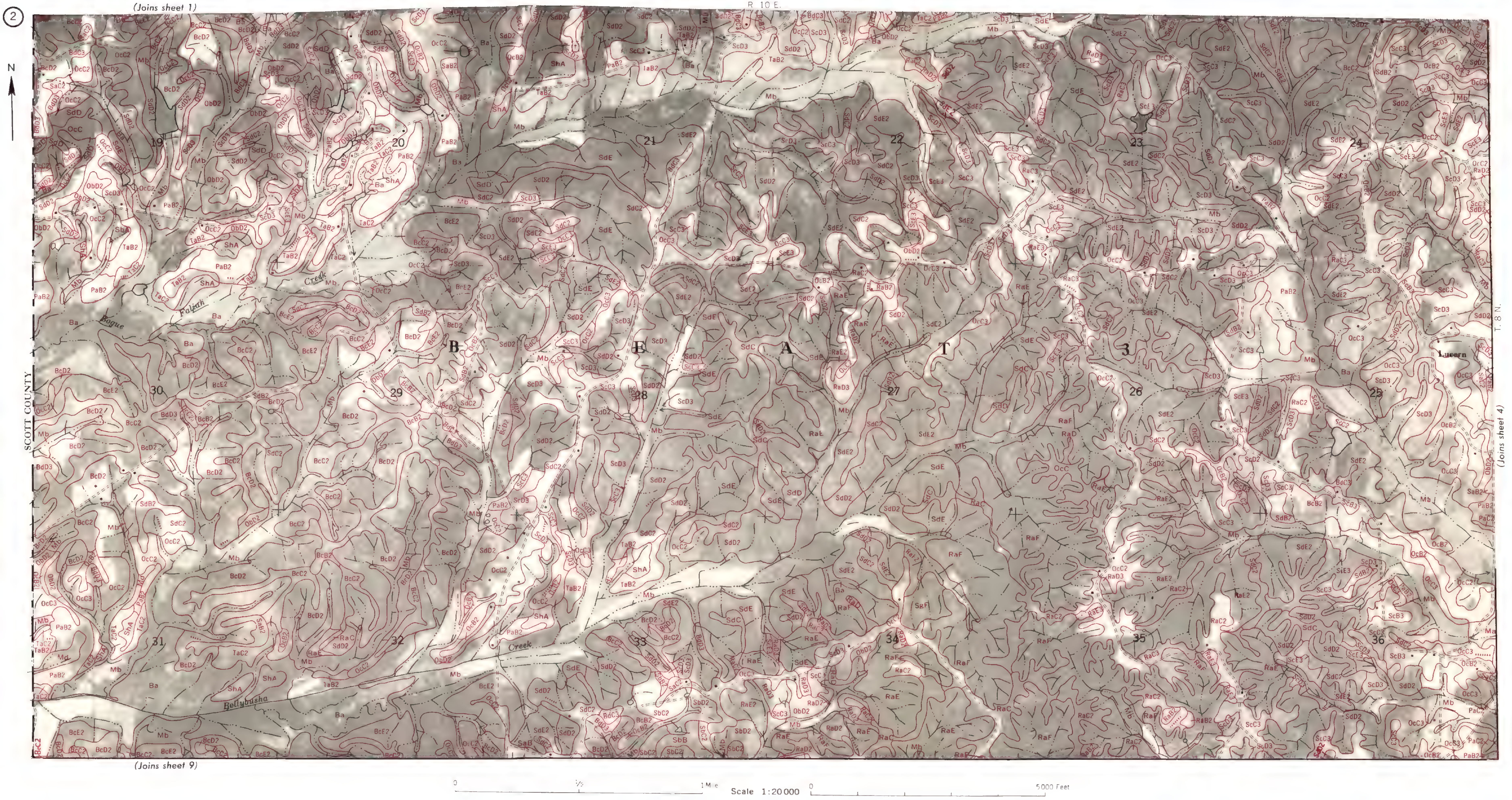
2
(Joins sheet 1)
R. 10 E.
N
SCOTT COUNTY
T. 8 N.
(Joins sheet 4)
(Joins sheet 9)
BEAT 3
Lucern
Bogue
Falijah Creek
Bollybusha Creek
0 ½ 1 Mile
Scale 1:20000
0 5000 Feet

This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs flown in 1955.

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0 1/2 1 Mile Scale 1:20000 0 5000 Feet

R. 12 E.

NESHOBA COUNTY

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Range, township, and section corners shown on this map are indefinite.

T. 8 N.

(Joins sheet 3)

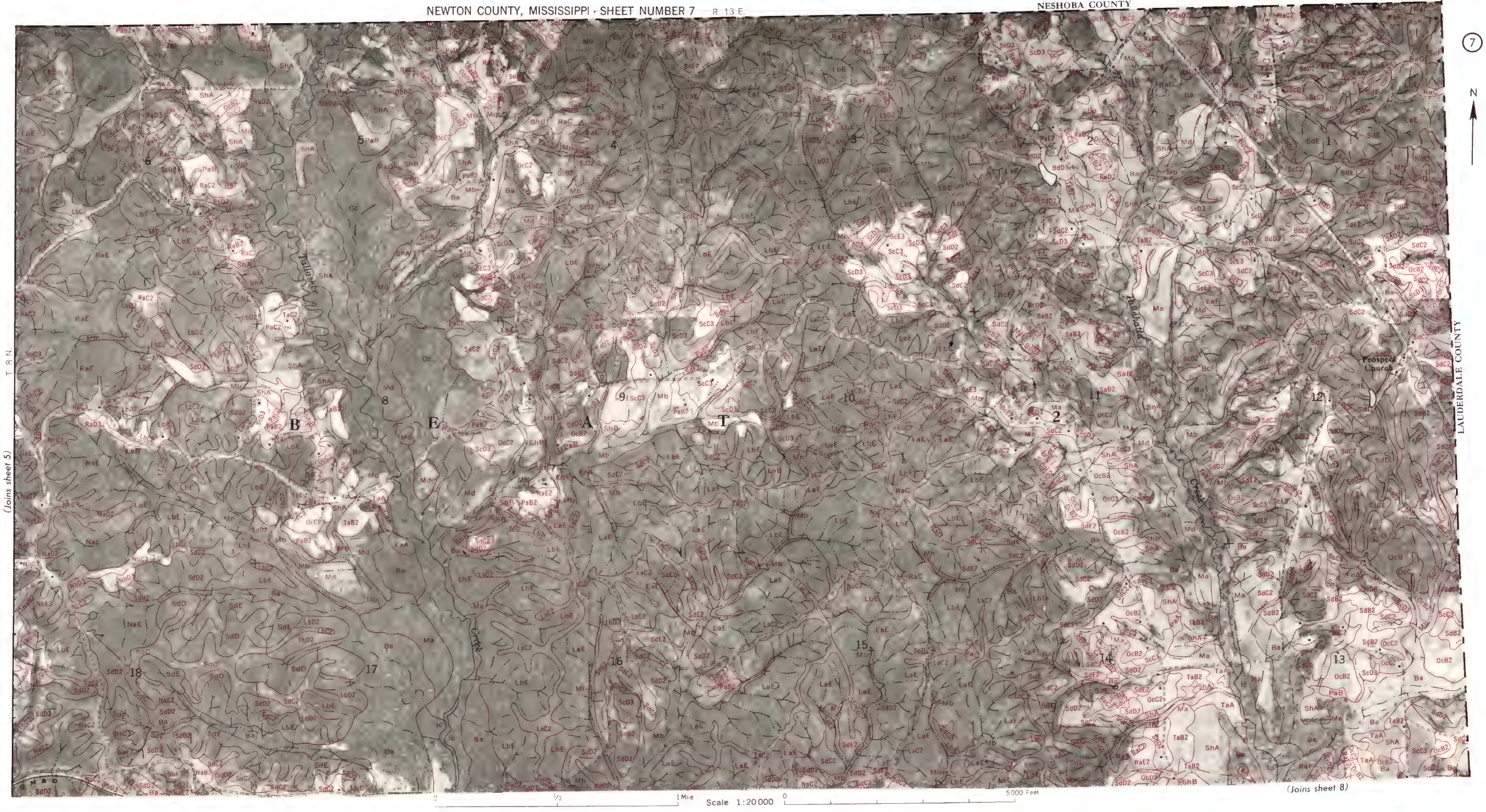
N

(Joins sheet 7)

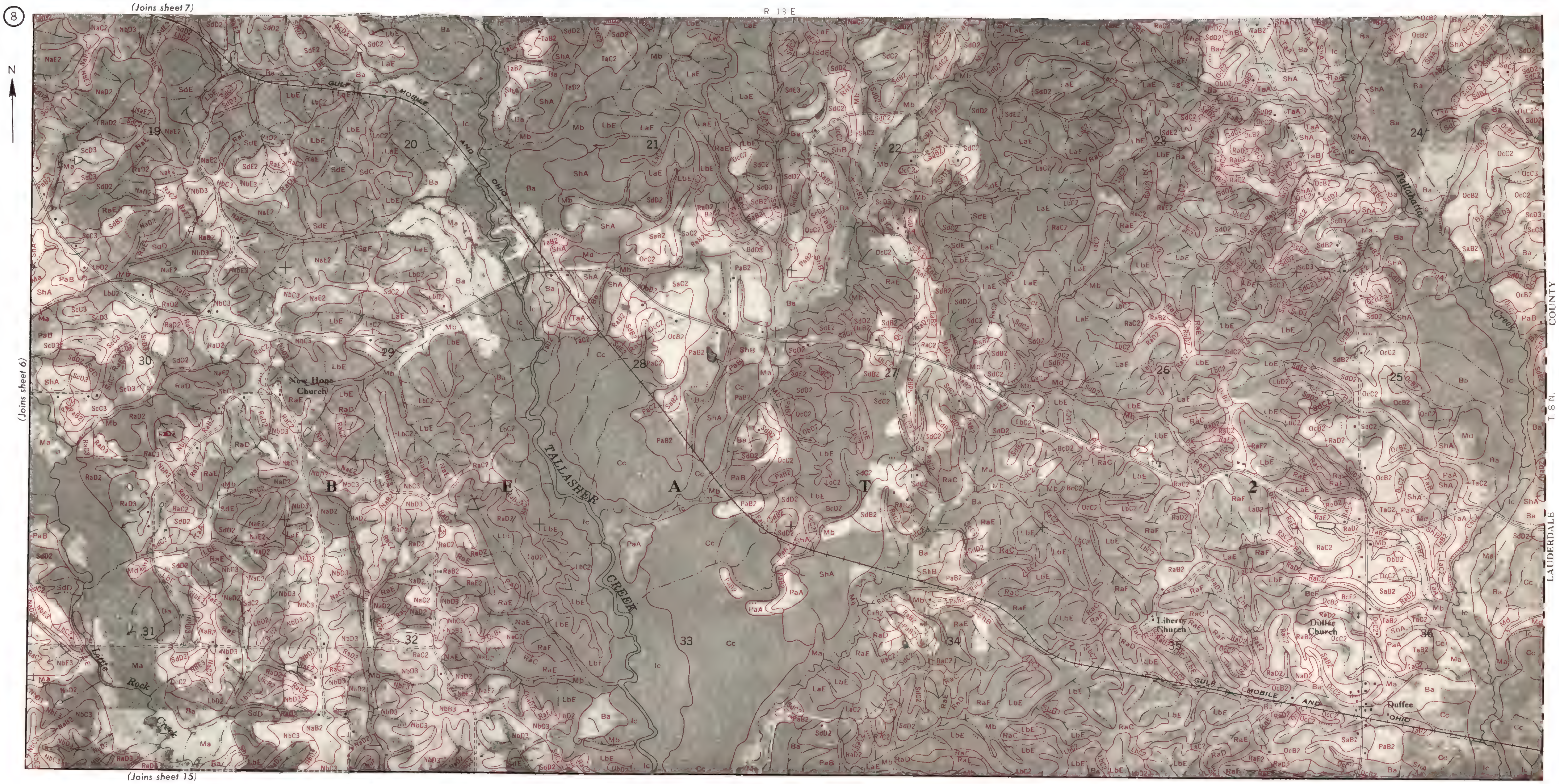
0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

(Joins sheet 6)

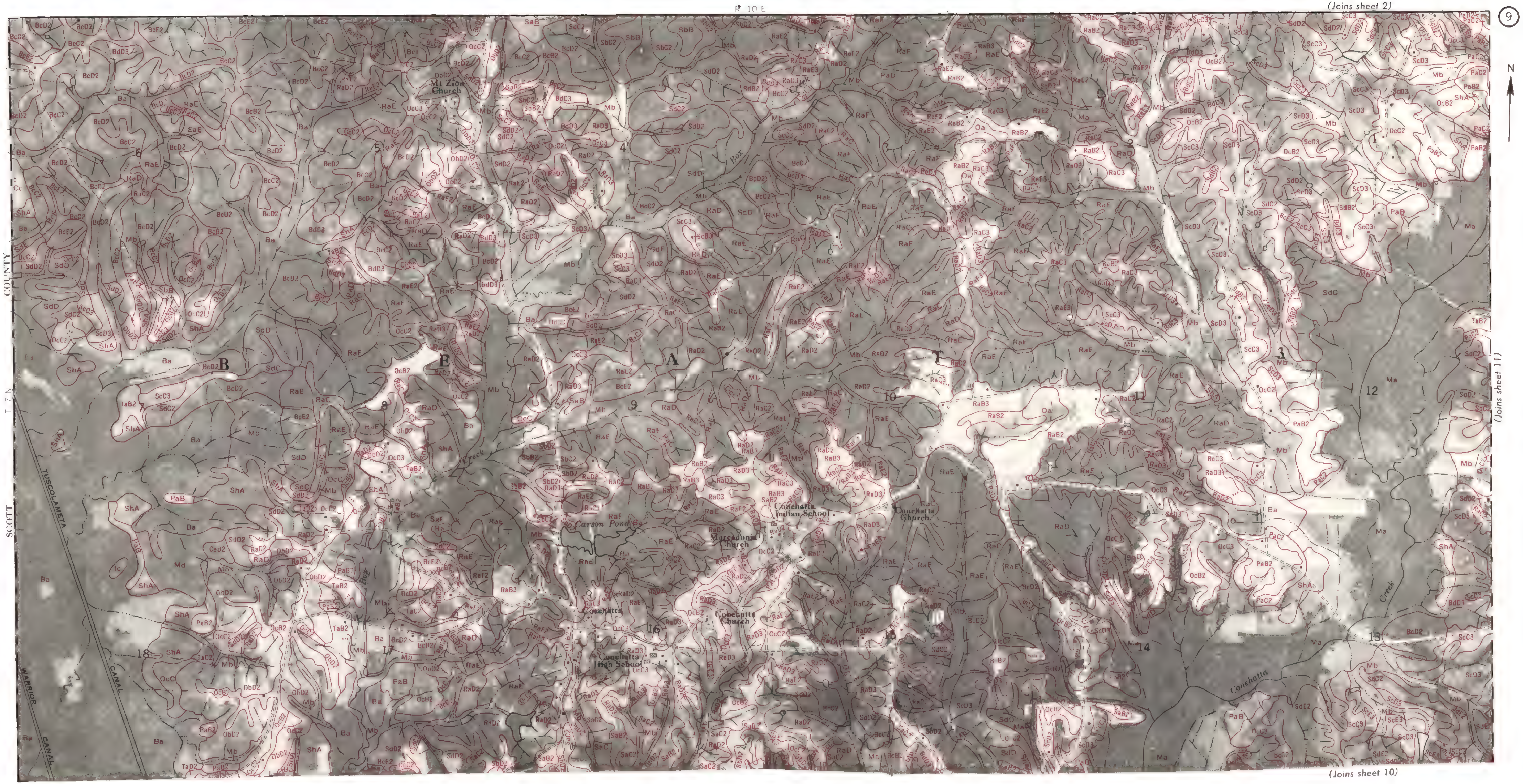
0 ½ 1 Mile Scale 1:20000 0 5000 Feet


R. 13 E.
NESHOBA COUNTY
LAUDERDALE COUNTY
T. 8 N.
(Joins sheet 5)
(Joins sheet 8)
N
7
B
E
A
T
2
Prospect Church
Scale 1:20 000
0
1/2
1 Mile
5000 Feet

8



0 1/2 1 Mile Scale 1:20 000 0 5000 Feet



0 ½ 1 Mile Scale 1:20000 0 5000 Feet


10
(Joins sheet 9)
R. 10 E.
N
SCOTT COUNTY
T. 7 N.
(Joins sheet 12)
(Joins sheet 17)
B E A T 3
WARRIOR CANAL
TUSCOLAMETA CANAL
Box Creek
Conehatta Creek
Caney Creek
Branch
Hensley
Sellers Creek
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
Scale 1:20 000
0
1/2
1 Mile
0
5000 Feet

R. 11 E.

(Joins sheet 4)

(Joins sheet 9)

T. 7 N.

(Joins sheet 13)

(Joins sheet 12)

0 1/2 1 Mile Scale 1:20 000 0 5000 Feet

This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of the area. For information regarding the complete [illegible] survey report, write to the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. [illegible] compiled from aerial photographs [illegible] 1955.

Range, township, and section corners shown on this map are indefinite.

12

(Joins sheet 11)

R. 11 E.

T. 7 N.

(Joins sheet 10)

(Joins sheet 14)

(Joins sheet 19)

0 1/2 1 Mile Scale 1:20 000 0 5000 Feet

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Range, township, and section corners shown on this map are indefinite.

Scale 1:20 000

0 ½ 1 Mile

0 5000 Feet

14
(Joins sheet 13)
R. 12 E.
N
DECATUR
(Joins sheet 12)
(Joins sheet 16)
(Joins sheet 21)
T. 7 N.
B E A T 1
B E A T 2
OAKAHATTA
CANAL
CHUNKY
CANAL
Branch
Bluntis
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
0
1/2
1 Mile
Scale 1:20 000
0
5000 Feet

NEWTON COUNTY, MISSISSIPPI - SHEET NUMBER 15

R. 13 E.

(Joins sheet 8)

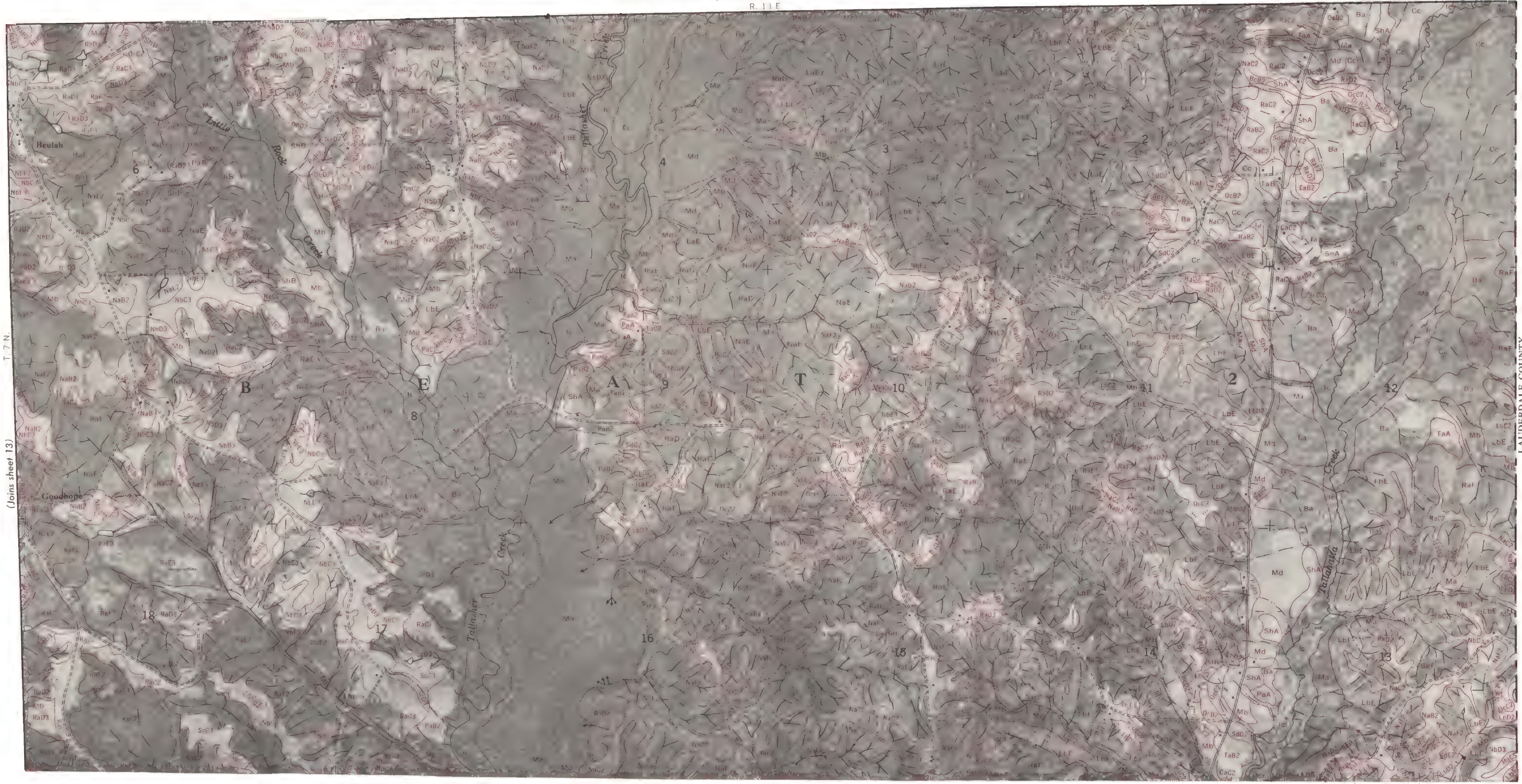
(15)

This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs taken in 1955.

Range, township, and section corners shown on this map are indefinite.

T. 7 N.

(Joins sheet 13)



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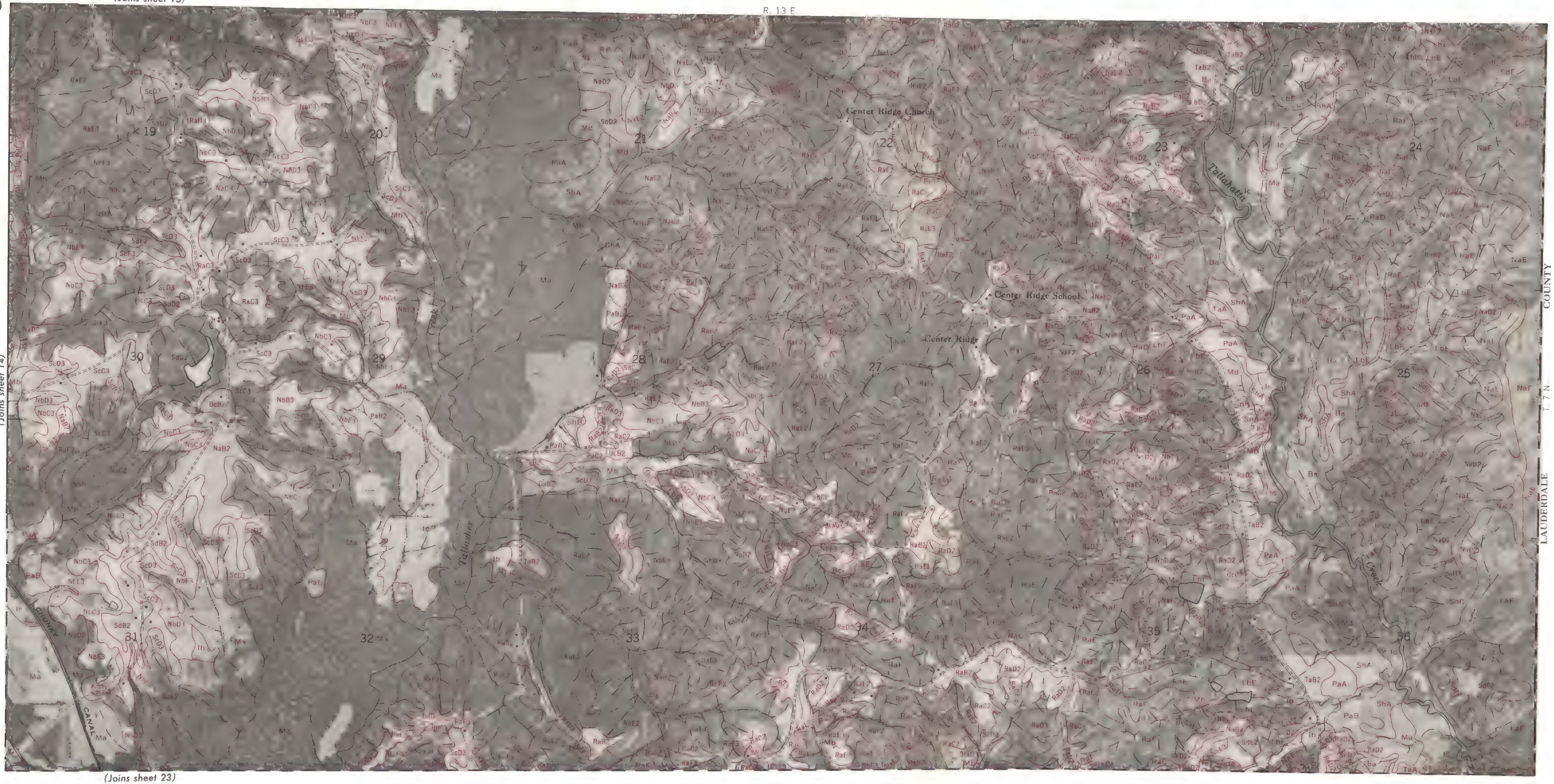
0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

16

(Joins sheet 15)



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(Joins sheet 23)

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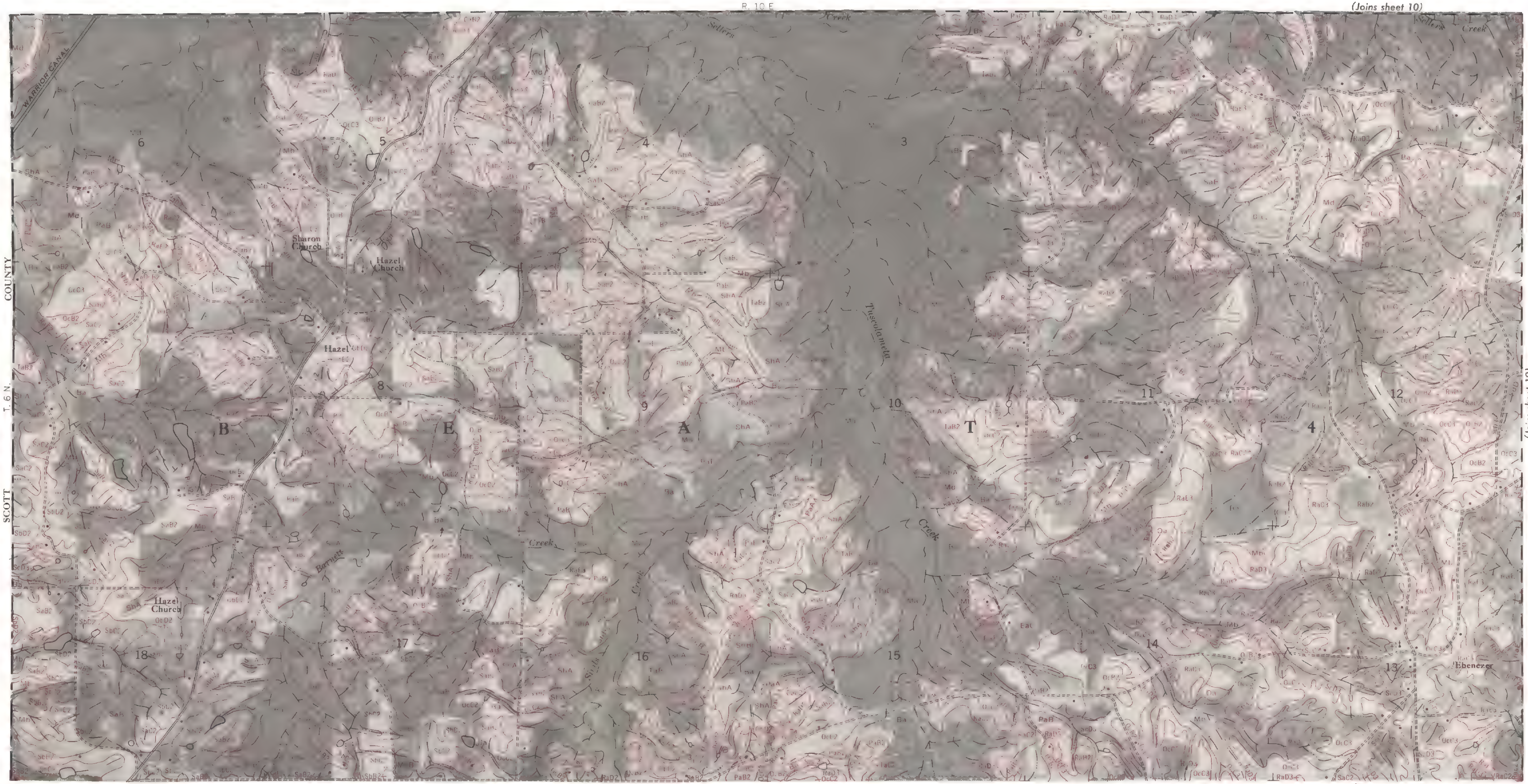


This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs flown in 1955.

Range, township, and section corners shown on this map are indefinite.

0 ½ 1 Mile Scale 1:20000 0 5000 Feet

18

(Joins sheet 17)

R. 10 E.

N

SCOTT COUNTY

T. 6 N.

(Joins sheet 20)

(Joins sheet 25)

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs flown in 1955.

Range, township, and section corners shown on this map are indefinite.

20

(Joins sheet 19)

R. 11 E.

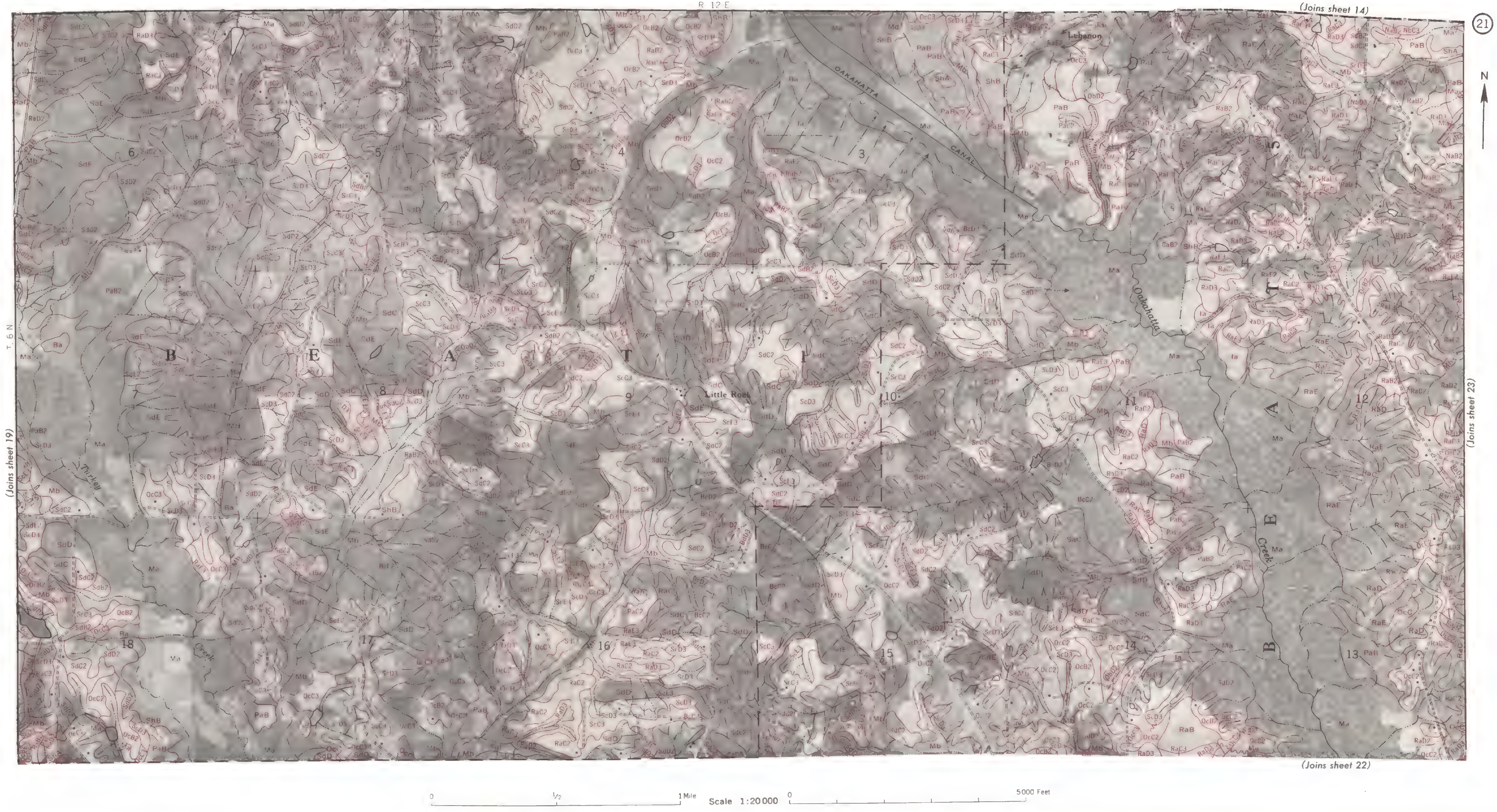
(Joins sheet 18)

(Joins sheet 22)

(Joins sheet 27)

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

NEWTON COUNTY, MISSISSIPPI - SHEET NUMBER 21



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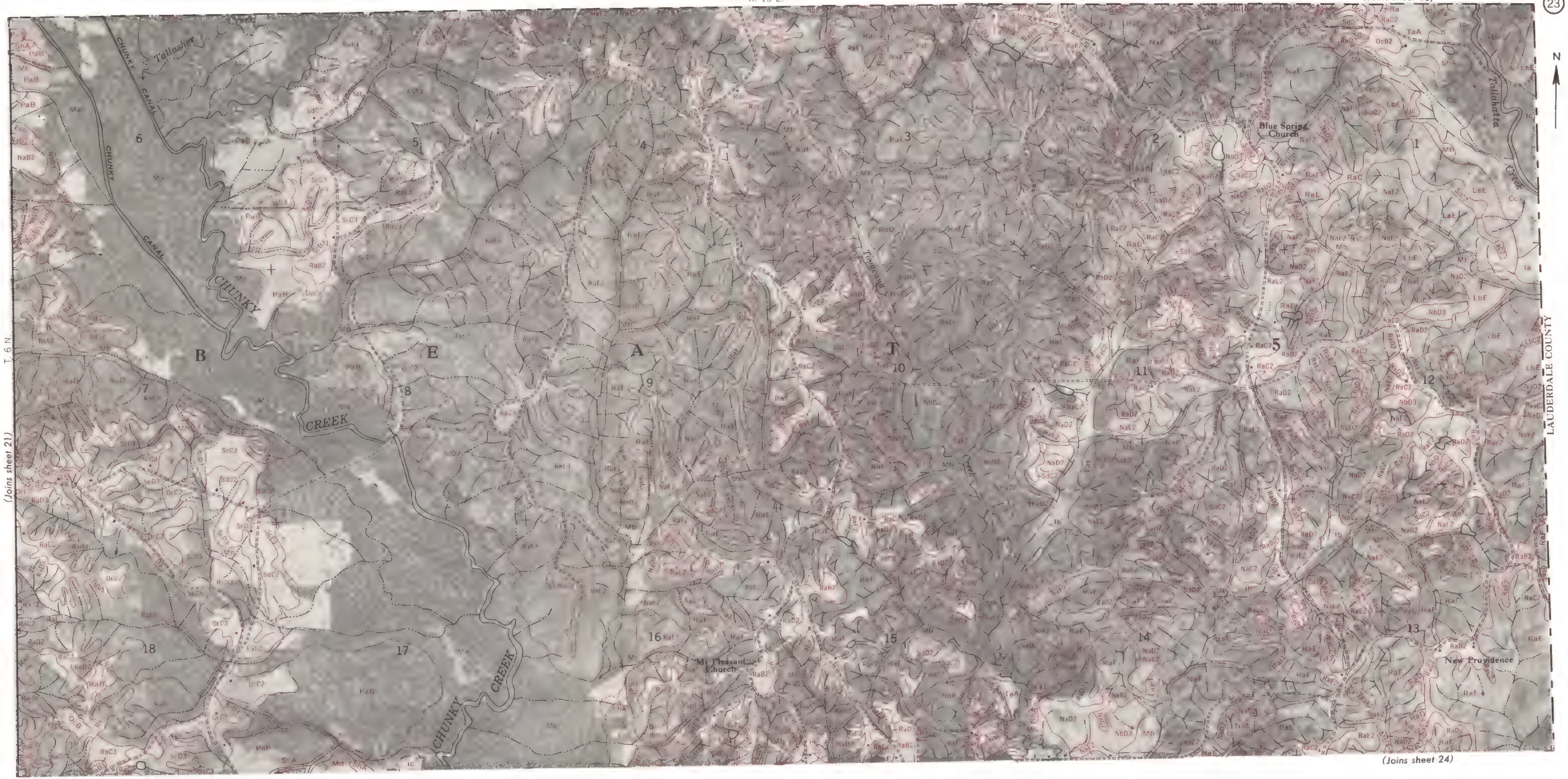
Range, township, and section corners shown on this map are indefinite.


22
N
(Joins sheet 21)
R. 12 E.
(Joins sheet 20)
(Joins sheet 24)
T. 6 N.
(Joins sheet 29)
B E A T 5
Potterchitto Creek
Parlow Creek
Oakahatta Creek
Bogue Falema Creek
POWER TRANSMISSION LINE
ILLINOIS CENTRAL
Hickory
0 1/2 1 Mile
Scale 1:20000
0 5000 Feet

R. 13 E.

(Joins sheet 16)

23



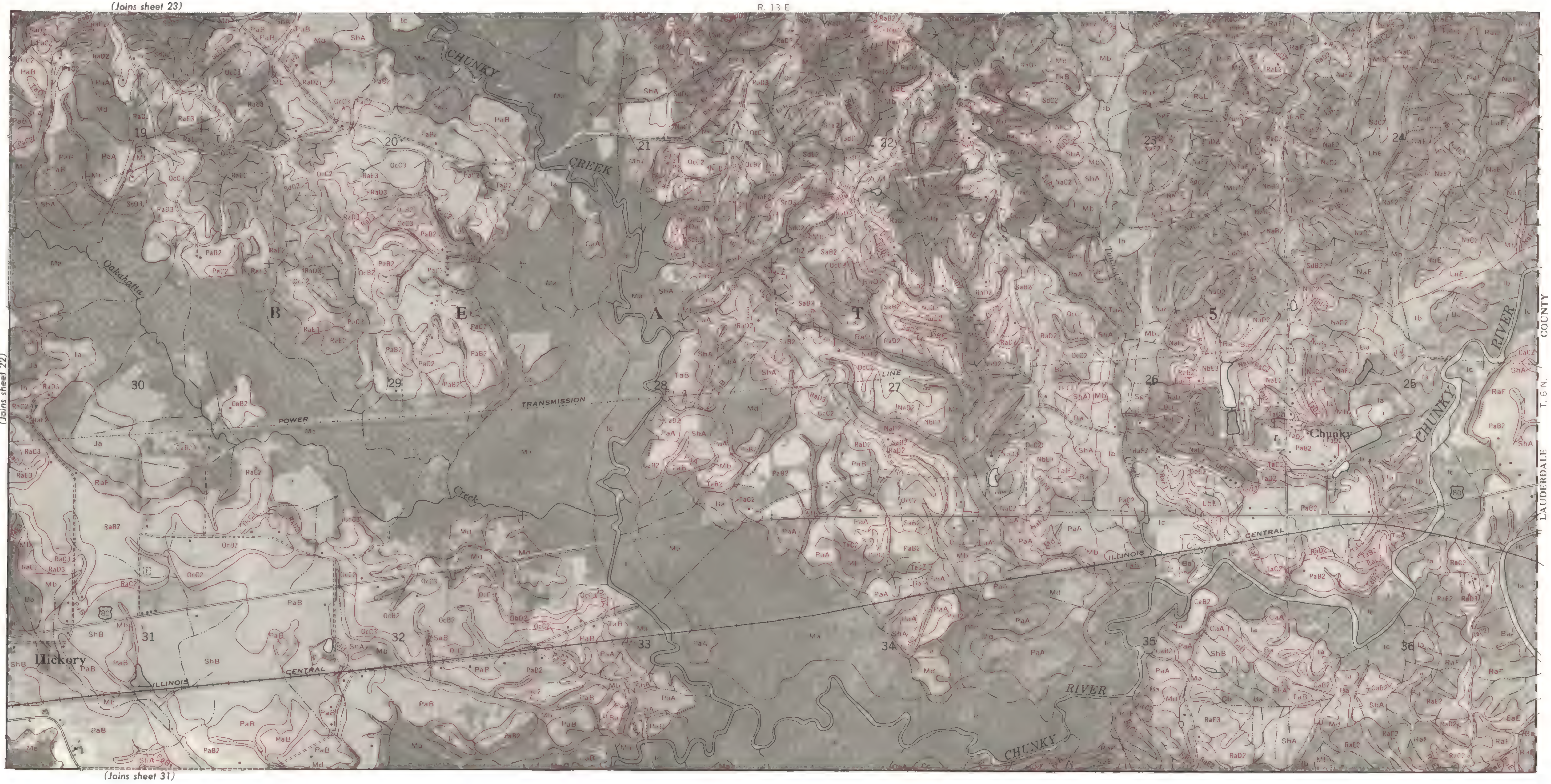
(Joins sheet 21)

(Joins sheet 24)

This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs taken in 1955.
Range, township, and section corners shown on this map are indefinite.

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

24



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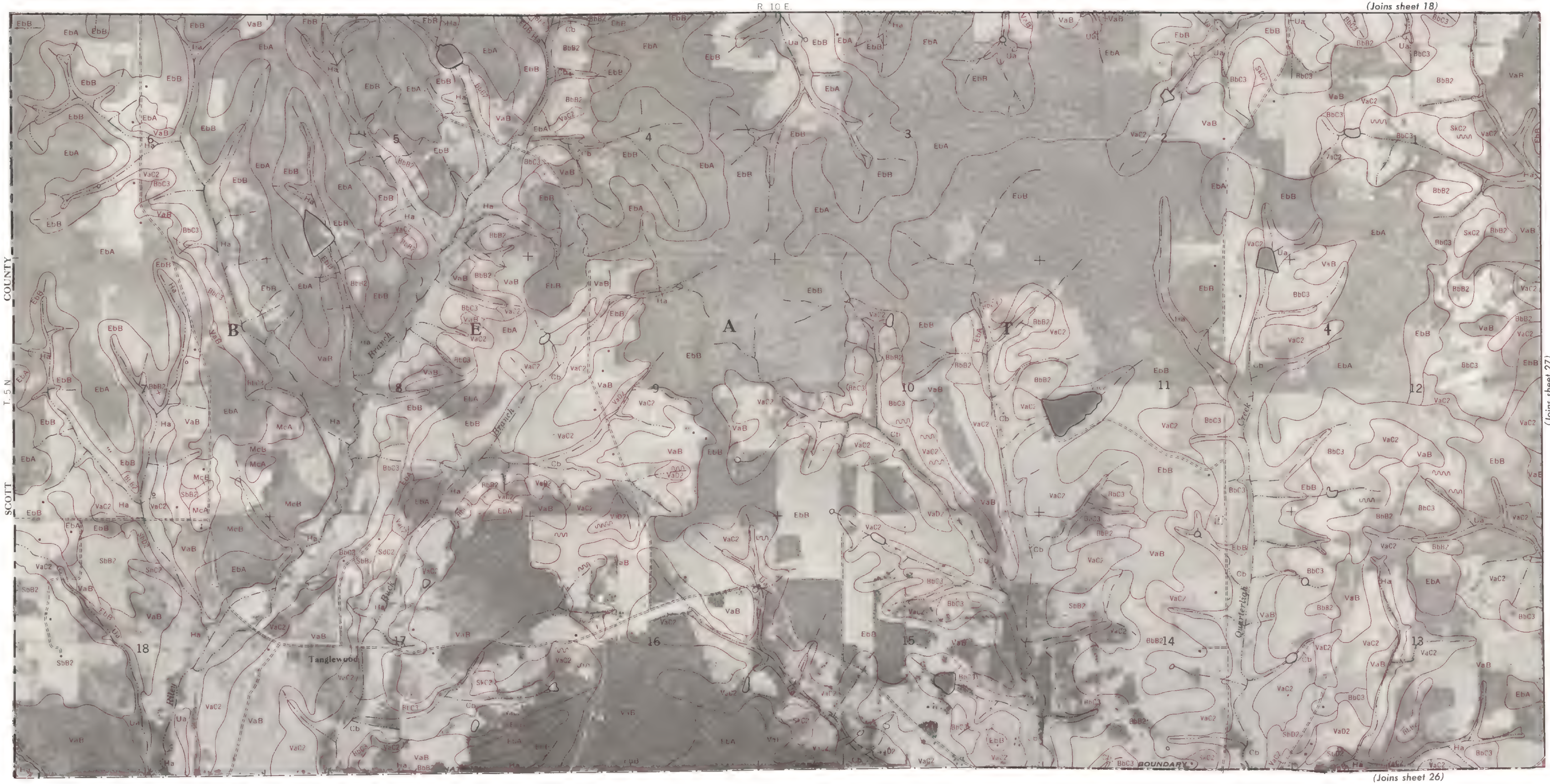

(Joins sheet 27)

(Joins sheet 26)

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Range, township, and section corners shown on this map are indefinite.

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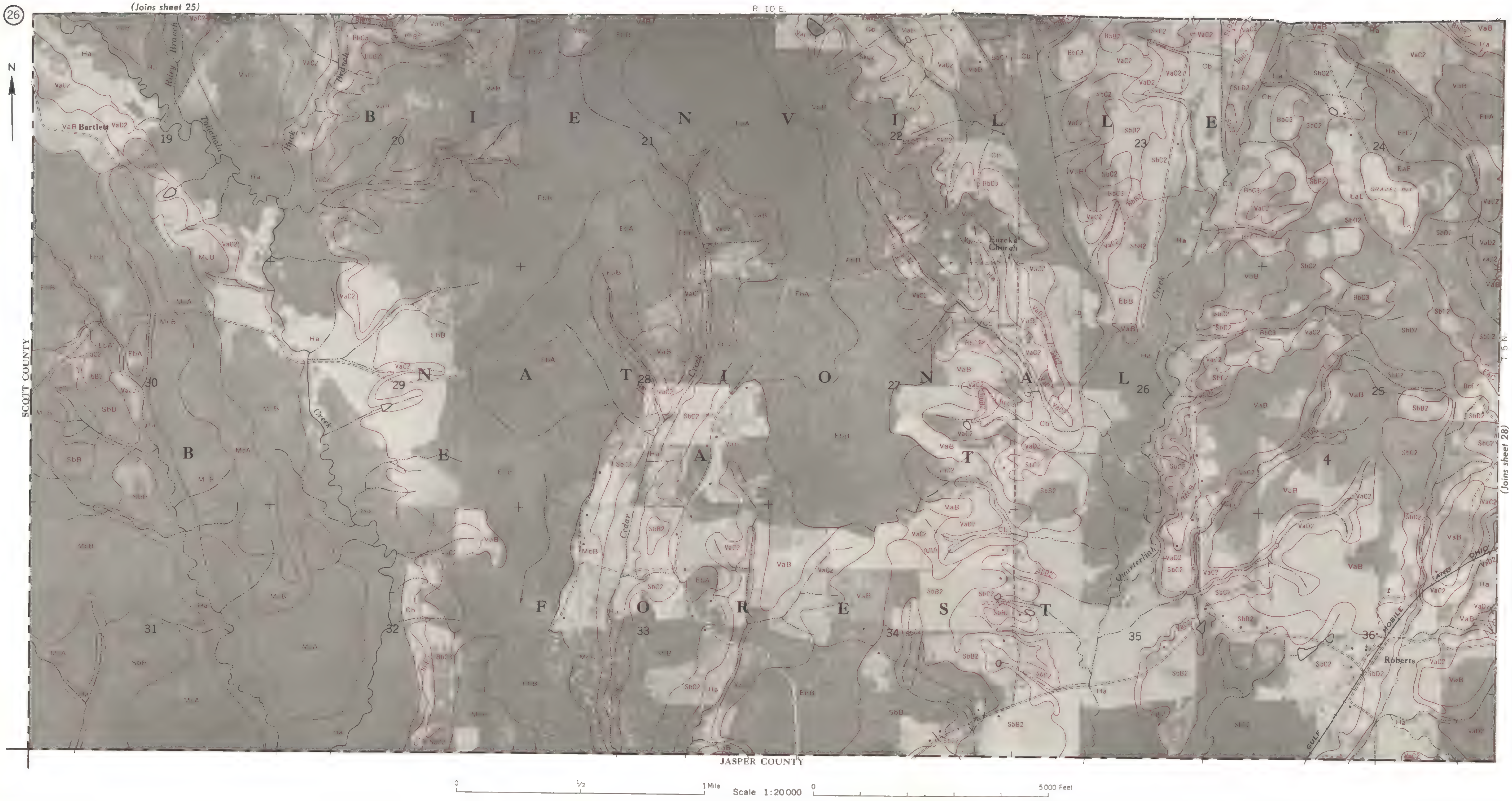
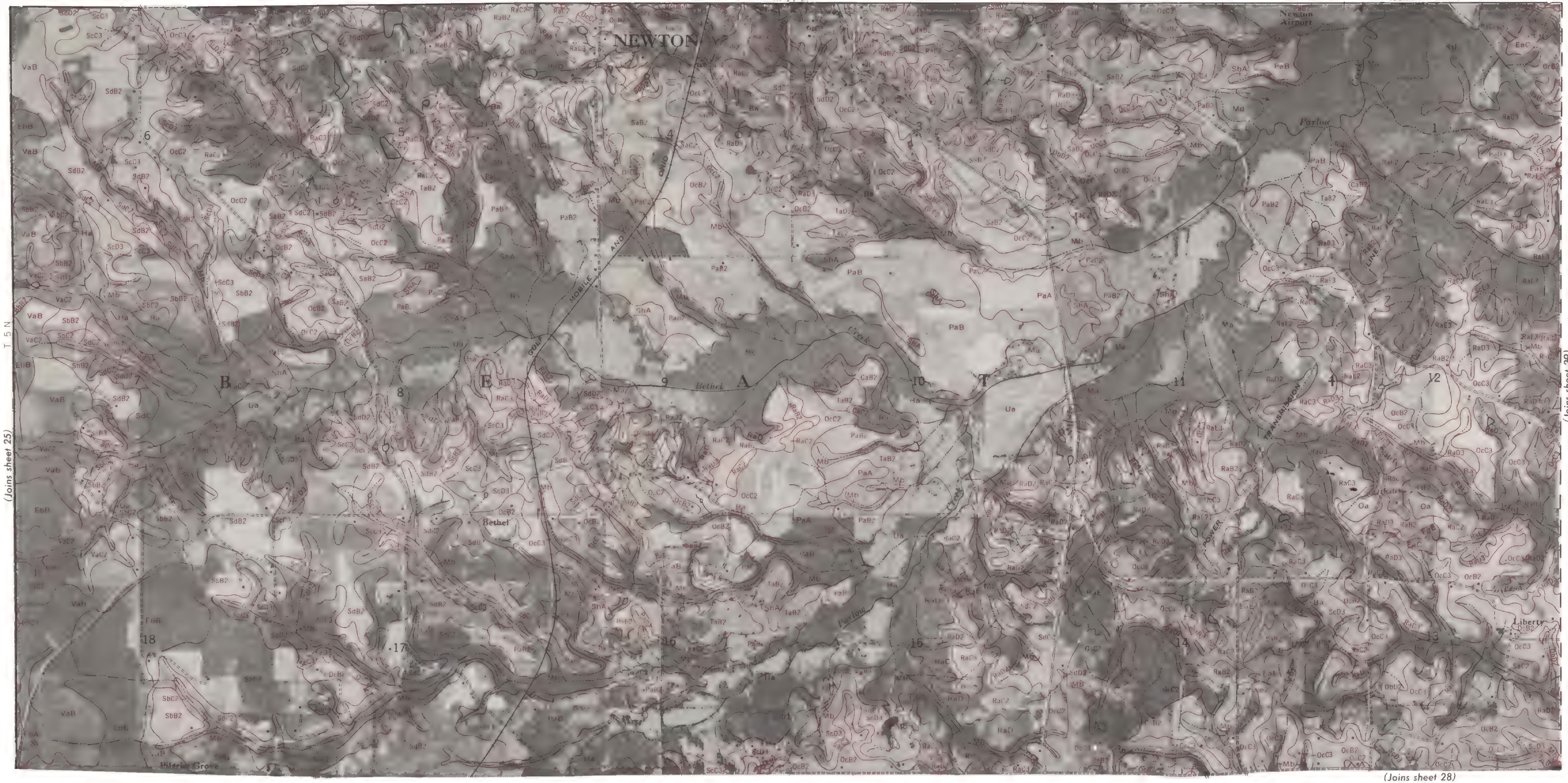

26
(Joins sheet 25)
R 10 E.
N
B I E N V I L L E
N A T I O N A L
B E A T
F O R E S T
Bartlett
Eureka Church
Roberts
Riley Branch
Tallahala
Buck Creek
Cedar Creek
Quarterliah Creek
GULF MOBILE AND OHIO
SCOTT COUNTY
JASPER COUNTY
T. 5 N.
(Joins sheet 28)
19
20
21
22
23
24
30
29
28
27
26
25
31
32
33
34
35
36
Scale 1:20 000
0
1/2
1 Mile
0
5000 Feet

(Joins sheet 20)



(Joins sheet 25)

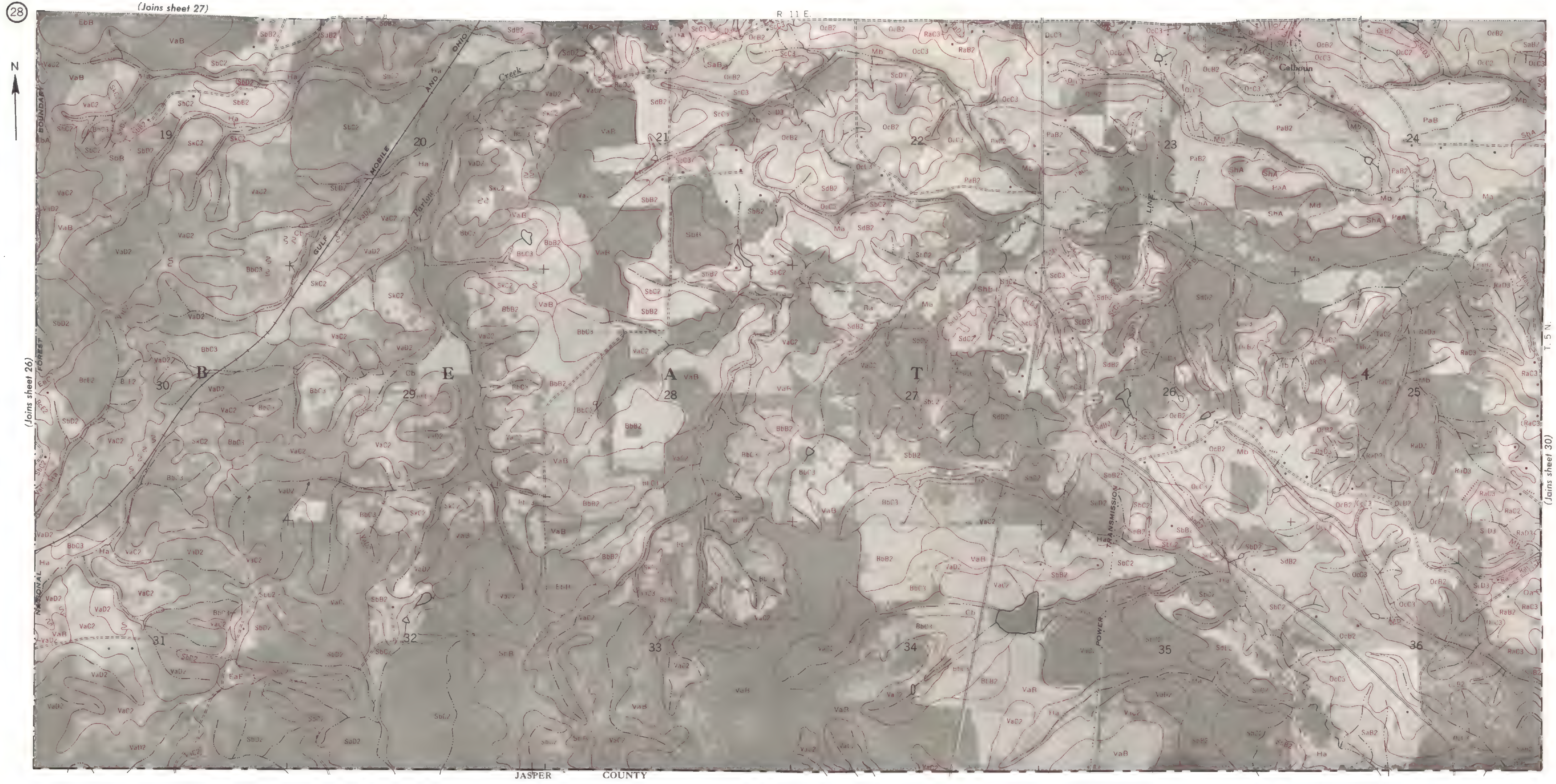
(Joins sheet 29)

(Joins sheet 28)

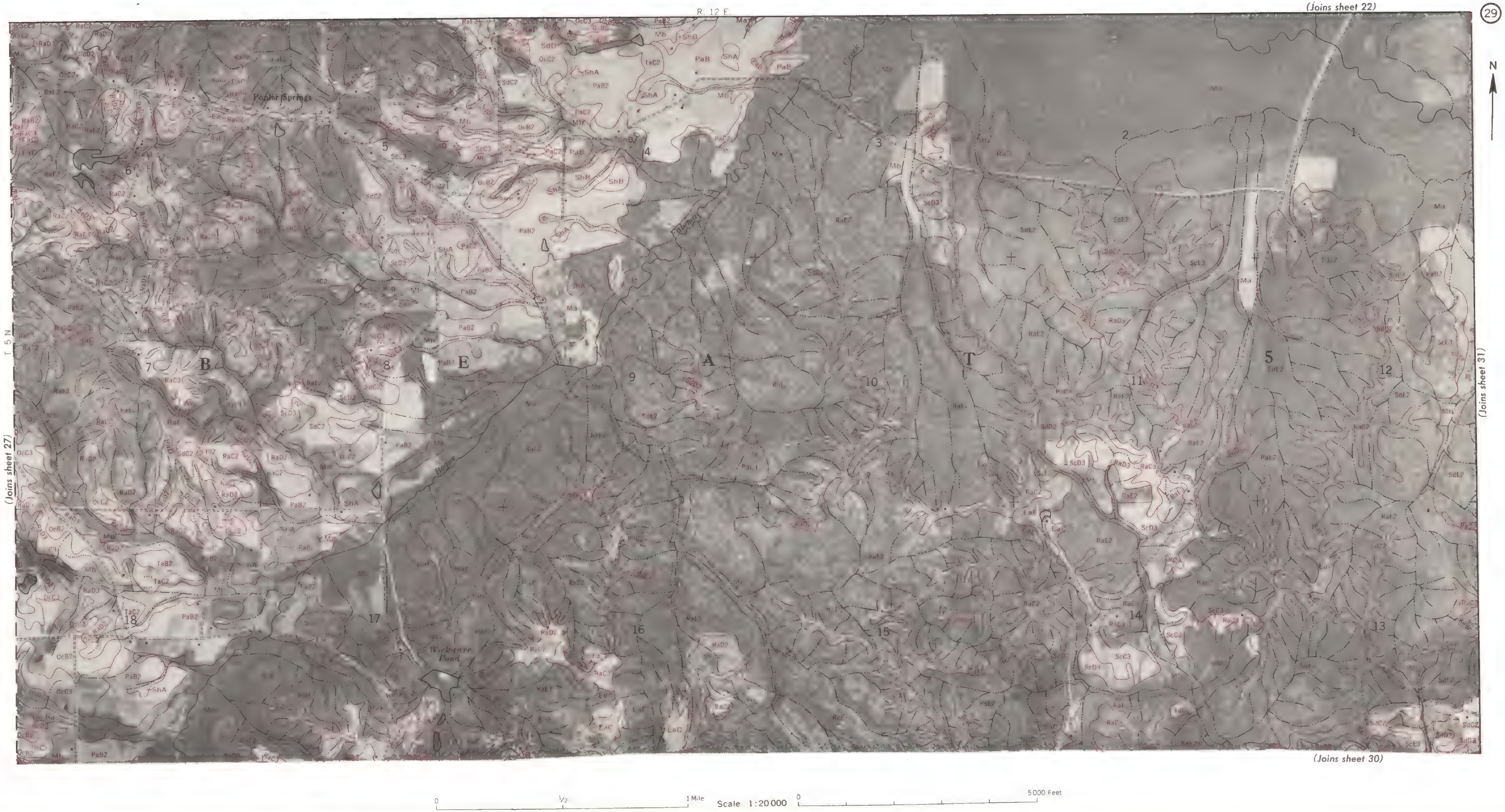
This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs flown in 1955.

Range, township, and section corners shown on this map are indefinite.

0 1/2 1 Mile Scale 1:20 000 0 5000 Feet



0 ½ 1 Mile Scale 1:20 000 0 5000 Feet



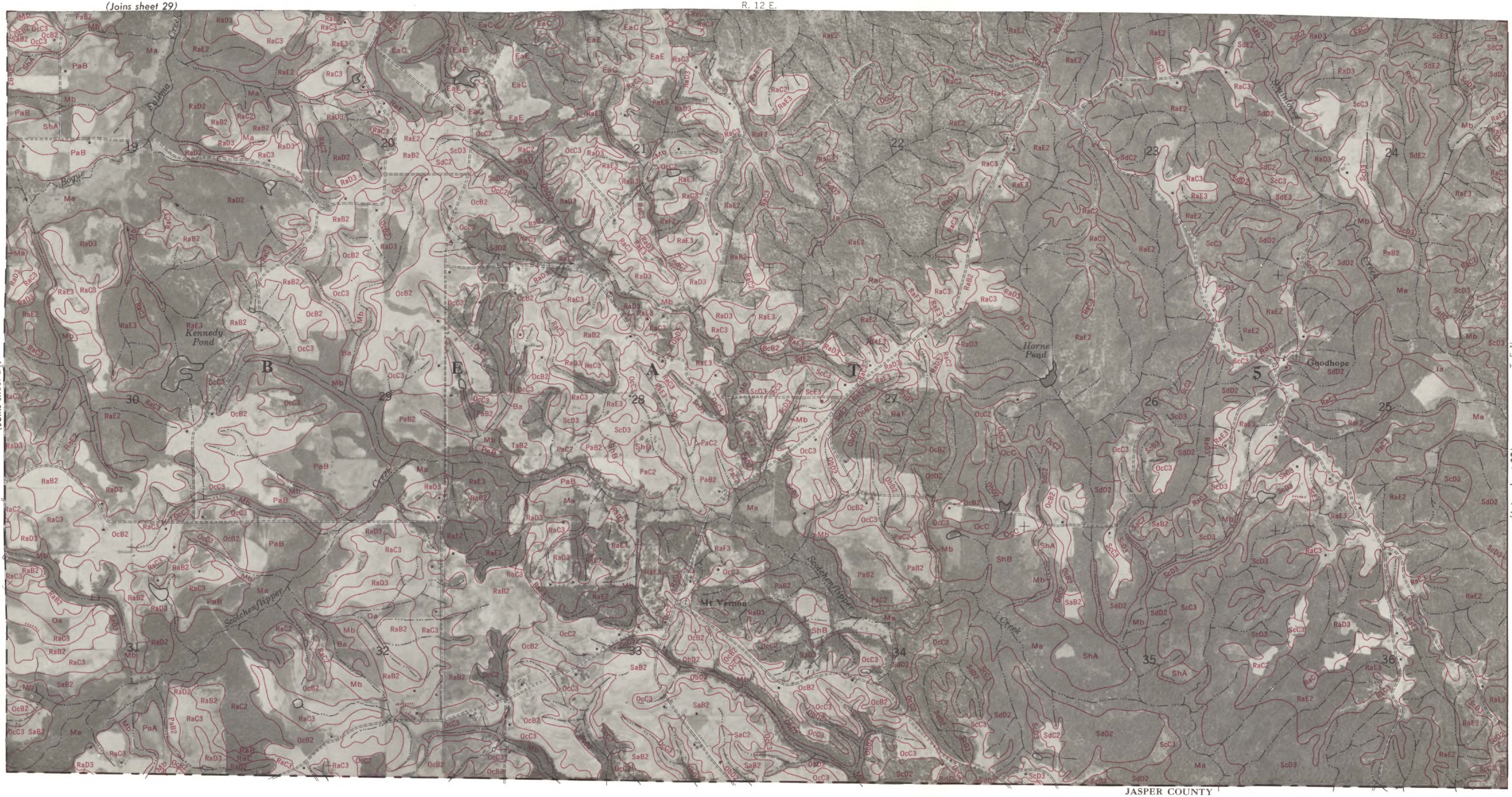
This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington, D. C. This map compiled from aerial photograph flown in 1965.

Range, township, and section corners shown on this map are indefinite.

30

(Joins sheet 29)

R. 12 E.



JASPER COUNTY

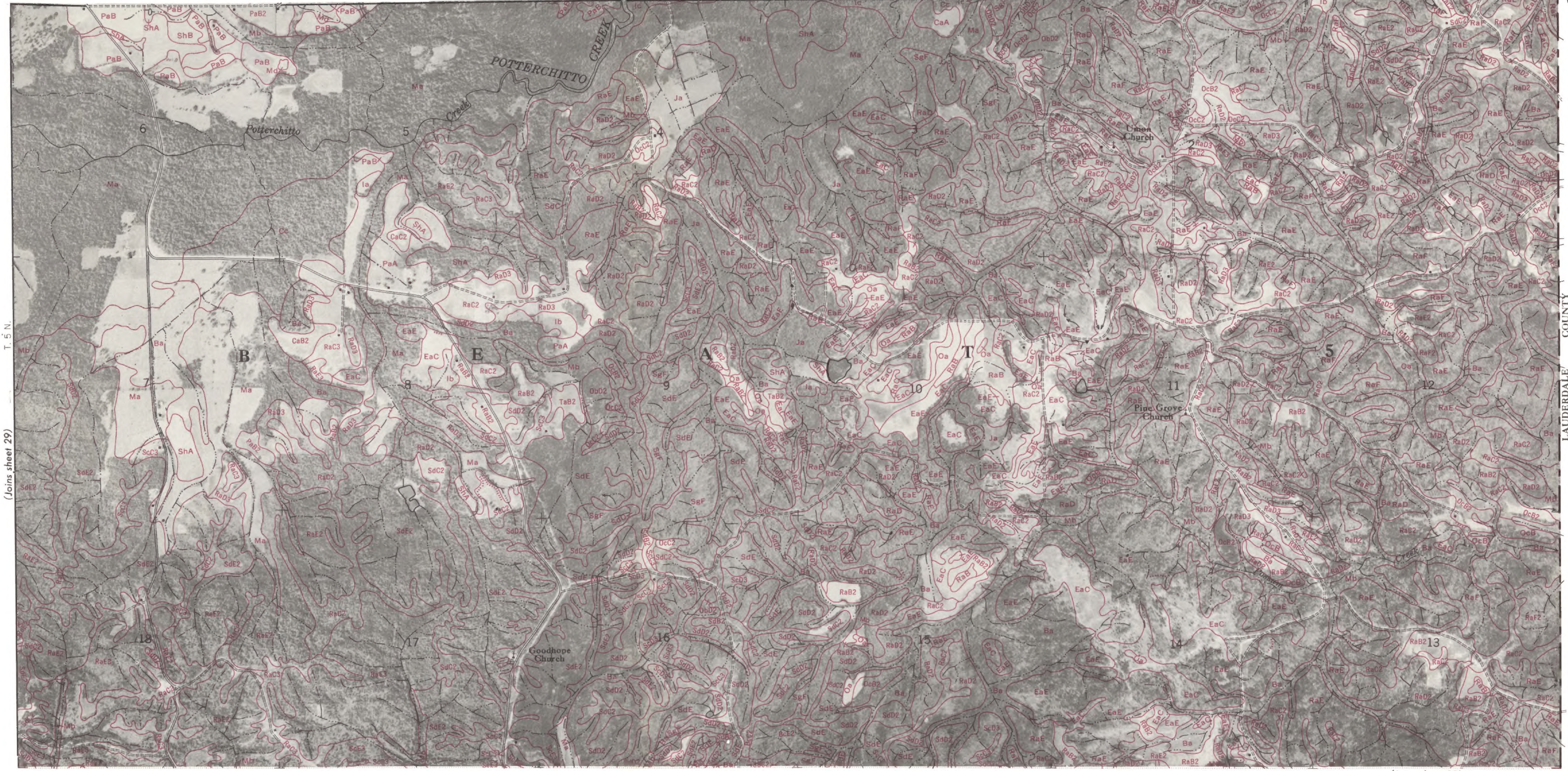
0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

R. 13 E.

(Joins sheet 24)

T. 5 N.

(Joins sheet 29)



(Joins sheet 32)

0 1/2 1 Mile Scale 1:20000 0 5000 Feet

mation regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs flown in 1955.

Range, township, and section corners shown on this map are indefinite.

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(Joins sheet 31)
R. 13 E.
N
(Joins sheet 30)
T. 5 N.
Springhill Church
B E A T 5
Allgood Creek
Souinlovey Creek
LAUDERDALE COUNTY
JASPER COUNTY
0 1/2 1 Mile
Scale 1:20 000
0 5000 Feet

INDEX TO MAP SHEETS

NEWTON COUNTY, MISSISSIPPI